

Radio Control **CAR ACTION**

THE WORLD'S LEADING R/C CAR MAGAZINE

SPECIAL! Sedan Wheel & Tire Guide

47380

October 1995

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USA-1

page 72

THRASH TESTED

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TCP

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ON THE COVER: photo by Walter Sidas.
This page: photo by Walter Sidas.



EDITORIAL

In today's edition of *Point-Counterpoint*, we'll look at a raging battle between editors John "Doogie" Howell and Frank "Crybaby" Masi. It seems that veteran racer Masi was beaten during an off-road race over the past weekend by novice racer Howell. Let's join them as they argue their points as to why each feels he is the true victor!

Whiners are not winners



Doogie (the true victor!): here's the real story: I qualified next to last in the Main, and Frank was TQ. We all arrived at the first turn almost at the same time, and I was taken out and found myself in last place. A few seconds later, there was another pileup, and I found that I'd moved up in the pack to about 10 to 15 feet behind Frank. We were coming up on this big tabletop jump, and Frank slowed down to avoid hitting the guy ahead of him. Well, everyone had been hitting this jump at full speed to clear it properly, so I was at full punch to clear it myself! Well, unfortunately, I drove right over Frank's parked buggy.

Frank (the righteous): I guess anything less than flat-punched is "parked" to Mister Afterburner. I don't want to come off as a poor sport, but.... After a good start, I flipped myself on my lid and let almost everyone but Doogie get by. I think that I was running fast enough to take back the lead, but then we came up to this big tabletop jump, and there were, like, three trucks in front of me. I saw Doogie lining up for a La Guardia airport, full-turbo-boost takeoff, and I said to him, "Easy boy"; but he came up from behind and plowed me into several other trucks and into oblivion. Of course, Doogie gets the first marshal, and I'm left on the track like an upside-down turtle. Here's my gripe: Doogie should have let off the throttle with traffic in front of him (especially considering the "traffic" was his boss). By driving "through" everyone, he ruined his and my chances of having a clean race. I've finished whining now.

Doogie (the good sport): oh, please! Can't you all just hear the violins? Whoa, what's that on the floor? I think it's Frank's wounded ego floundering around, gasping for air. C'mon everyone, let's all rally around Frank and give the poor guy a big hug! Anyway, he's just mad 'cause I beat him in front of all his other racing buddies, and they all know it was only my second off-road race. There was plenty of time left after our crash; why couldn't the so-called mighty "Speed Racer" catch me then? As I recall, I glanced back every once in a while only to see his car T-bone some PVC pipes! Frank definitely gave the marshals a good workout that day.

Frank (the injured): if Doogie spent half as much time watching his own truck as he apparently spent watching mine, this whole thing wouldn't have happened! Of course I crashed a few times afterwards. Wouldn't your concentration be shattered if your "best buddy" had attacked you from behind? "Et tu, Brute?" Ugh, twist that knife a little deeper!

Doogie (still finished ahead of Frank): the only reason I kept looking back at his car was to figure out why the horrible noises kept coming from the back of the pack. Every time, it was his car smacking headfirst into the PVC pipe. Anyway—I beat him!

Frank (still not yet humble): I hear Competition Plus is hiring!

John Howell *Frank Masi*

We want to hear from you!

Write, fax, or e-mail us over the Internet: Car Action, Air Age Publishing, 251 Danbury Rd., Wilton, CT 06897; fax: (203) 762-9803; e-mail: Chris Chianelli—chris@airage.com; John Howell (Doog)—johnh@airage.com; John Huber—jhuber@airage.com; Frank Masi—frankm@airage.com.

Radio Control CAR ACTION

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SUBSCRIPTION PRICES:
U.S. & Possessions (including APO & FPO): 1 year (12 issues), \$34.95; 2 years (24 issues), \$59.95. Canada: 1 year, \$51.31; 2 years, \$91.97 (includes G.S.T.). Elsewhere: 1 year, \$47.95; 2 years, \$85.95. Payment in U.S. funds. Single-copy prices: \$4.95 (USA); \$5.95 (Canada). Canadian G.S.T. number R130754872. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 0609153.

RADIO CONTROL CAR ACTION (ISSN 0886-1609, USPS 001-087) is published monthly by Air Age, Inc., 251 Danbury Rd., Wilton, CT 06897, USA. Connecticut Editorial and Business Office, 251 Danbury Rd., Wilton, CT 06897. Phone: 203-834-2900. FAX: 203-762-9803. Michael F. Doyle, Chief Executive Officer; Y.P. Johnson, President; G.E. DeFrancesco, Vice President; L.V. DeFrancesco, Secretary; Yvonne M. DeFrancesco, Treasurer. Second Class Postage Permit paid at Wilton, Connecticut, and additional Mailing Offices. Copyright 1995 by Air Age, Inc. All rights reserved.

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LETTERS

YET ANOTHER JUMPER!

In the June issue, Doogie wrote an editorial about how R/C cars should have a supercross racing class, and I agree with him completely. He wondered whether this would be popular. Well, I have a story that may help him to make up his mind.

I live near a BMX track that's now closed on the weekends. About 3 months ago, some friends and I went over to the track and asked if we could race our R/C cars on it. We raced for about 2½ hours. The next weekend, we went back, and by the end of the day, we were all getting air between 5 and 6 feet, and a crowd had gathered at the side of the track. The following Sunday, there were about 25 people already racing when we got there, and the owner, John Marius, put up a sign showing where A/C power was available. He was amazed; who would have thought one weekend of fun would end up like this?

Thanks to my friends and me, there's a new track to race on. We can also race at night under the lights, and it's all in the name of fun. There are four classes for both trucks and buggies. The track is open all day for practicing, and the only cost is a \$10 entrance fee if you race.

I think that if an organization like ROAR started a supercross class, it would have lots of fans. I think it would be a welcome addition to the world of R/C racing.

DAVID "HELLRAISER" WEEKS
Southfield, MI

I totally agree, Hellraiser! Thanks for writing in. I received a ton of responses to my editorial, and I want to thank everyone for

writing in with their opinions.

You know, the name of the game is exposure, and if you're out jumping your R/C car on a BMX track and people are nearby, you're gonna get noticed. When John Huber and I jump our R/C cars on the local BMX track, anyone who's nearby instantly comes over to us, and the "whoas" don't stop! It's a pretty cool scene.

Anyway, keep spreading the word: big jumps equal big fun!

Doogie

GOTTA GET GPM

I read your April 1995 "R/C Doctor" with great interest. In that column, Doug Mertes mentioned GPM parts, but I can't find an address or fax number for them. Can you help?

MEL SILBERG
Highlands North

Well, Mel, you can get hold of GPM parts through Hobby Etc. Try contacting them at 650 Amherst St., Greystone Plaza, Nashua, NH 03063; (603) 595-8549; fax (603) 881-4959. Good luck.

Doogie

TEAMING UP FOR TAMIYA

First of all, let me congratulate you for having such a great magazine. It's an excellent source of information for racers outside the U.S.—like me. We're attempting to create a race team to compete in some of the Tamiya Championship Series races. The only problem is that we don't know the rules concerning the cars, the hop-ups, etc. We'd appreciate it if you would give us an address where we can get this information.

ERIK BARBOUR
Guadalajara, Jalisco, Mexico

Here's the deal, Erik: you can contact Tamiya directly for all the info you need. Their address is Tamiya America Inc., 2 Orion, Aliso Viejo, CA 92656-4200; (800) TAMIYA-A. I wish you and your team the best of luck; have fun racing!

Doogie

BODY BOOK

In the July '95 issue, you printed an article about Kevin Holmlund's home-built Honda FourTrax 250R. In the article, it says that he ordered a guide called "Make Your Own Bodies," by Douglas E. Walsh. How can I order

WRITE TO US! We welcome your photos, drawings, comments and suggestions. Letters should be addressed to "Letters," Radio Control Car Action, 251 Danbury Rd., Wilton, CT 06897-3035. Letters may be edited for clarity and brevity, and each must include a full name and address or telephone number so that the identity of the sender can be verified. We regret that, owing to the tremendous numbers of letters we receive, we can't respond to every one.

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John Huber: jhuber@airage.com
Stacey Granelli: staceyg@airage.com



LETTERS

that book? Thanks for your help.
CHRIS PARRIS
 Douglasville, GA

Well, Chris, after receiving your letter and many others requesting the guide, I called Kevin and asked him how to get a copy. Just send a check

or money order for \$9.95 to Vacuum Form, P.O. Box 214318, Auburn Heights, MI 48321. Good luck!

Stacey

NEWCOMER QUESTIONS

I read the article in the June '95 issue of *R/C Car Action* about converting to

Pro-Line tires. I have two questions, and I hope that you can answer them for me. I'm pretty new to R/C cars, and I just finished building my first buggy. In your article, when you described mounting the tires on the rims, you mentioned putting "a continuous bead of thin CA between the tire and the rim." What is CA; is it some kind of glue, and would hobby stores sell it? Also, would it be wise to get some truck rear rims and use the Dirt Hawgs on my buggy? What kind of effect would that have on its performance? Your answers to these questions would be greatly appreciated. Thank you.

PETER WU

San Diego, CA

Sorry for the confusion, Peter. CA refers to cyanoacrylate, or "superglue." CA that's suitable for hobby use is available at most hobby shops, and it comes in various thicknesses and types for different purposes. For gluing tires to wheels, I use Pacer's Zap-A-Gap (the stuff with the green label). There are many brands of CA other than Zap, of course; check with your local dealers to see what they carry and recommend.

You can mount truck wheels and Dirt Hawgs on the rear of your buggy, but you'll have to change to a much smaller pinion gear to achieve the right ratio. Also, the buggy may handle strangely with such large tires. My advice is to run with the Road Hawgs on your buggy rims or mount larger truck wheels all around so the car will be balanced.

Frank

FLOAT YOUR BOAT

Is it possible to take any ESC, such as a Novak, and put it in a boat. I would very much appreciate your help—thanks.

RCBUILDR@aol.com

Yes, you can use any ESC, but do everything you can to keep it dry. A good tip is to spray the circuit board with "The Stuph"—a red lubricant you can find in good hobby shops. It will coat everything and waterproof the ESC.

John

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A REAL LOOKER

This is a shot of Ray Parker's award-winning Tamiya Mazda Renown. Featuring a Tamiya Black motor, a Novak HPC ESC and NER-3FM receiver, this car took the track at the Tamiya Challenge Race held in Tulsa, OK.

Although Ray admits that the competition was too tough for him to place well in the race, he did win Best in Show GTP. Ray is always looking for people to race with, so if you're out and about in Broken Arrow, OK, give him a shout.



SWAMP THING?

Something had been spotted crawling from the depths of a murky swamp in McMurray, PA! The town was in a full-on panic. Was it a freak of nature? A creature unknown to man? No. It was just Derek Glaser's Clod Buster out for an afternoon trek. Derek's Clod features an ESP Clodzilla 2 chassis kit; a long-wheelbase, multi-link suspension; and aluminum body mounts. He plans to add ball bearings, Trinity long shocks and ESP Power-Up motors to his "menace to society."



HEVY KEVY'S CHEVY

Kevin "Hevy Kevy" Meyer of Westminster, CO, sent this photo of his crazy ride. The custom-painted Protoform Monte Carlo body with Autographics decals sits on top of a Composite Craft LTO graphite chassis. The Futaba Magnum Jr. sends its signals to a Tekin AM mini-receiver, Tekin TSC G-12 ESC and Futaba S132 servo. Power comes from an Extreme "Smoke" stock motor and a Sanyo 1400 SCR 6-cell pack.



Robert has a car that features a TIG-welded, steel tubular space frame with torsion bar; coil-over front suspension; a quick-fill aluminum fuel tank with rollover valve; aluminum Nerf bars; and .031 aluminum sheet-stock body panels. Controlled by Futaba electrics and powered by a Petco 32cc 2-stroke engine, it's capable of producing 2hp at 8,000rpm. Great job, Robert!

SCRATCH-BUILT STOCKER

Robert Jensen of East Brunswick, NJ, sent this photo of his home-built 1/4-scale Northeastern D.I.R.T. open-wheel modified stock car. After more than 700 hours,



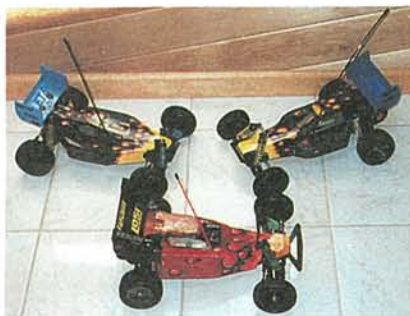
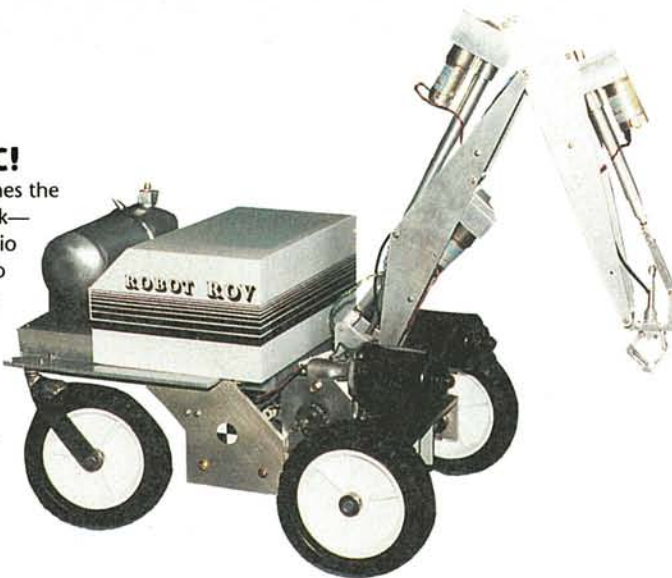
"TOY" TRANSFORMATION

Tom Robinson of Baltimore, MD, was determined to modify his Nikko Alienator to make it more competitive. But, his local hobby shops, and even Nikko, told him he couldn't do it—the car was just a toy. Undaunted, Tom picked up a copy of *Car Action* to become better acquainted with the R/C world. The result—Tom proved them wrong. His car now sports a Novak Rooster ESC, Futaba radio gear, a Trinity Speedworks motor, HPI and Losi tires and wheels, Bolink pinion gears, Race Prep brushes and comm drops and a Sanyo battery pack with Tamiya connectors. He also re-painted the stock body. He says his car flies and amazes everyone.

"Readers' Rides" is our way of recognizing the unique, innovative—and sometimes bizarre!—vehicles that our readers have created. Send us a sharp, uncluttered, well-exposed color photo of your car or truck (no Polaroids, please!), along with a brief description, to *Readers' Rides*, R/C Car Action, 251 Danbury Rd., Wilton, CT 06897. If we choose your photo, you'll receive a 6-month subscription to *Car Action*, or an extension of your existing subscription. You'll also be eligible for the fourth annual "Reader's Ride of the Year Contest" in the fall of 1995. Write your address and phone number on your letter and on the back of each photo you send, in case we need to contact you.

IT'S ALIVE—WELL, AT LEAST R/C!

Straight from his secret lab in Fort Collins, CO, comes the latest invention of mad-scientist Gary Kirkpatrick—this Robot ROV. It uses a 7-channel Futaba radio to control 6 DC motors and a solenoid. The two independent 7-inch-diameter rear wheels are driven by Subaru windshield-wiper motors and provide tank-like maneuverability. A 100psi compressed-air tank stores the energy for the pneumatically operated claw, and a 12V motorcycle battery provides the juice.



THE BROTHERS' THREE

These highly modified R/Cs—JR-X2, RC10, BossCat—come from Mike and Jeff Hastings of Langhorne, PA. They tell us that it would take an entire page to list all the modifications and equipment on these three rides; but here are a few: titanium and aluminum hardware; Sanyo SCRC batteries; dyed wings and suspension components; Airtronics radio gear; Tekin ESCs; a choice of stock or modified motors; Tekin mini-receivers; and custom-painted bodies. The Hastings run the cars daily and take great pride in keeping them well-maintained.

STUMPED!

Ken Kareta of Ludlow, MA, sent this photo of his reconstructed RC10T. Ken didn't originally plan to modify his truck so soon, but after an altercation with a tree stump, he had no choice. He replaced the thrashed aluminum chassis with one from Composite Craft. While he was at it, he added MIP CVDs, a Hydra Drive, RPM steering cranks, ball bearings, Lunsford Punishers, an RPM mini-bumper, Pro-Line tires and a Toyota body. He says he owes a lot to Chris at R/C Madness in Enfield, CT, for helping him to get back on track.



THE DYCHKO DIGGER

Michael Dychko of Cleveland, OH, sent this photo of his wild monster truck. It's equipped with a Clod-A-Leaver suspension kit and an ESP ladder-frame chassis. Powered by DuraTrax 18-turn motors and controlled by a Novak Hammer Pro, this truck easily rolls right over obstacles. Michael tells us that, just four days after he had completed the truck, it won first place at the Aircraft/Non-Aircraft Model Car Show at the ParmaTown Mall. Congratulations, Michael.

FANTASTIC FOUR

Eric Hahn of Catasauqua, PA, sent this photo of his four favorite R/C vehicles. The Tamiya Bullhead is equipped with an ESP ladder frame and long-wheelbase multi-link suspension, Kyosho 4-inch Black shocks and Kyosho Mega motors. The RC10 sports a fiberglass chassis with a Stealth transmission and a Speedworks stock motor. Eric tells us that the Bolink Sport, with a stock Twister motor and Tekin 408 ESC, really rips. He saves his Tamiya Grasshopper for cliff jumping and other radical R/C feats.



In search of fun
and glory, cause
life's too short
to be a sheep • by Chris Chianelli

INSIDE scoop



Richard and Charlie Muise (the artist and his apprentice) of Motion Graphics are now offering one-of-a-kind, ready-to-run R/C trucks and cars built to your specifications. As you can see from the photo, an extensive selection of these fantastic creations is available immediately. Prices range from \$250 to \$600. Call Rich or Charlie at the Motion Graphics shop, and let them fix you up with a beautiful machine that's sure to make your buddies green and hatin' you with envy. Call (410) 848-0008.



▲ Trinity's revolutionary Midnight motor.

Once again, Trinity's design team has broken new ground with the Midnight. This ROAR- and NORRCA-legal, hand-assembled stock motor is new from can to commutator. The thicker 1.3mm

can (the same one used in the Kinwald modified motor) features cooling tunnels, and it houses 5.2 wet magnets to improve the magnetic field. A cool-running motor means greater power and longer life. This is the first time Trinity has used its famous, slotted, short-stack armature in a stock motor. The Thermal Transfer Gateways are aluminum heat sinks located at both ends of the armature. Laying the wire over the heat sinks dissipates heat more efficiently as the armature spins. Another Trinity first (shown in the close-up) is the new, narrow cross-section bronze bushings that have about one-third less contact with the shaft than standard bushings, thus reducing power-robbing friction. Watch for a feature article on the Midnight in the November issue of *Car Action*. Contact Trinity, 1901 E. Linden Ave. #8, Linden, NJ 07036; (908) 862-1705; fax (908) 862-6875.



You say that you don't have the time to build, but you want to race, and you want to do it now? Well, consider MRC's 1/10-scale MT-10 trucks. For those who haven't read about it already, the MT-10 includes many features that are preferred by the pros and available at sport-truck prices, e.g., ball-diff slipper clutch; adjustable links; oil-filled, coil-over

shocks; 30-degree front rake angle; and natural rubber tires. MRC now offers the ready-to-run version, which comes with a Futaba 2PB radio (installed) and a painted, decal'd body. Also shown is the Thunder King RTR. Go from the box to the track really fast with these new trucks from MRC. Contact Model Rectifier Corp., 200 Carier Dr., Edison, NJ 08817; (908) 248-0400; fax (908) 248-9803.

**Race
right
now!**



F1 easy

Tired of mounting foam on F1 wheels? Pro-Line's new mounted-and-trued JACO foam tires and wheels have really simplified life for F1 enthusiasts. Mounted on 1.41-inch composite rims, the new line includes all the popular compounds (green, blue, pink, purple and white). They're ready to bolt on and race—no gluing, no taping, no foul language—just instant racing fun. The mounted and trued foams come in standard and exotic compounds for everything from parking-lot to carpet racing. Also new from Pro-Line is this beautiful Protoform '95 Benetton B195 F1 body that fits the Tamiya 103 chassis perfectly and is designed to be used with the Ferrari 412T front wing. The electronics fit nicely into the sleek F1 profile, and molded turning vanes are included. Contact Pro-Line USA, P.O. Box 456, Beaumont, CA 92223; (909) 849-9781; fax (909) 849-2968.



Cross-Cut Close-Up

Team Losi has added this new directional front truck tire to its already extensive line of racing tires. The Losi Directional combines three angled ribs on half of the tire and two narrow ribs on the other half to produce more steering with less understeer without creating oversensitive handling. To fine-tune the steering, the tire can be mounted so that the ribs run in either direction. The Losi Directionals were used in competition for the first time at the Winterchamps

in Tampa, FL. They were mounted on eight of the 10 A-Main trucks in the Modified Truck class. Drivers at this race said the new tire produced more steering and was easier to drive with than the tires they had been using. Losi Directionals are available in Gold and Silver compounds, and foam liners are included. Contact Team Losi Inc., 13848 Magnolia,



Chino, CA 91710;
(909) 465-9728;
fax (909) 590-1496.

U.S. First Champs

The kids from Raychem and Woodside high schools in California are shown



here celebrating at Walt Disney World after having won the 1995 U.S. First National Championship with their "Stealth" robot. The U.S. First competition was a tournament that pitted R/C "robo-gladiators" against one another. Teams of high school students and professional engineers built the robots out of a standard parts kit provided by U.S. First. The objective was for the robots to collect, transport and lift one 24-inch and/or one 30-inch ball up a ramp and over a horizontal bar. Tekin Electronics supplied the speed controls for the 48 robotic contenders. Founded in 1989 by inventor and entrepreneur Dean Kamen, U.S. First is a national, nonprofit coalition whose broad range of innovative scientific

programs is designed for young people. For more information, contact U.S. First, 340 Commercial St., Manchester, NH 03101; (603) 666-3906; fax (603) 666-3907.

ESC of the Future?

Associated Electrics has been appointed the exclusive distributor of the LRP line of electronic speed controls that are made in Europe. The technology on these digital controllers is so innovative that they require no heat sinks because they run so cool. Incredible as it may sound, Associated claims they have not had a single failure



during four months of extensive testing. Both Cliff Lett and Mark Pavidis say that it's the most reliable speed control they've ever used. Team Associated has reported quicker accelerations, higher top speeds and longer run times than with any other controller they've used. Does Team Associated have the ESC of the future? Stay tuned.

HAVE YOU BEEN SCREWED BY TRINITY LATELY?



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EV0152	4-40x1/2 Socket Head Screw, 12pc	\$5.99
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For decades, the legendary small-block Chevy has been a favorite of hot-rod and performance car builders. Available in several configurations (blown, fuel-injected and normally aspirated versions of the 283, 327, 302, 350 and 400ci), it has found its way into more street and track machines than any other V8. The famous 375hp 350 LT-1 is a recent example, and what a mean mill this is. Parma now offers a 1/10-scale plastic kit of this motor-city icon. The kit includes all the parts needed to build two complete motors. For the fuel-delivery system, you can choose three carbs or six carbs with a scoop, fuel-injection, a down-draft blower, or create a bit of nostalgia with a front-draft blower. A wiring kit is also included. It's excellent as a display or in an R/C hot-rod or monster truck. Contact Parma, 13927 Progress Pkwy., North Royalton, OH 44133; (216) 237-8650; fax (216) 237-6333.



BRITANNIA BUGGY POWER

For decades, 1/8-scale gas racing has been very popular in England and Europe. The lack of aggressive marketing has left much of the modeling public unaware of Irvine's high-performance engines, which have been manufactured in England for many years. Now, Altech Marketing has obtained exclusive distribution rights to Irvine engines in the U.S. Shown here is the Irvine .20 ABC Buggy Mk. III—a powerful engine that idles well and is designed specifically for 1/8-scale buggies. This engine features a new, reinforced crankcase, a thick-walled liner with true chrome (not nickel) plating and a precision-machined and balanced crankshaft. The precise 8mm Powerjet slide carburetor provides excellent linear throttle response that's vital to winning races. Everything about this engine screams "rugged," and it should provide many hours of serious fun.

Contact
Altech
Marketing,
P.O. Box 391,
Edison, NJ
08818-0391;
(908) 248-8738.



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Dirtinator Motor

This new Kinwald Series modified motor uses high-density epoxy to bring the armature into balance. Epoxy is applied to the lighter poles to make them equal in weight to the heavier ones; this perfectly balances the armature without disrupting the magnetic field. The result is a more powerful, more efficient, cooler-running motor. It's available in seven winds.

Part nos.—KD0509 (9-turn quint), KD0410 (10-turn quad), KD0411 (11-turn quad), KD0312 (12-turn triple), KD0313 (13-turn triple), KD0214 (14-turn double), KD0215 (15-turn double); **price**—\$95 each.

Trinity Products Inc., 1901 E. Linden Ave., #8, Linden, NJ 07036; (908) 862-1705; fax (908) 862-6875.



MOTOR MAN

Copper Battery Bars

These bars are made of .040-inch-thick copper for super-low resistance. They help to keep your packs rigid so they'll stay in place better. They're sold in packs of 10.

Part no.—MM1510; **price**—\$3.99.

Motor Man; distributed by Hobby Warehouse of Sacramento, 8950 Osage Ave., Sacramento, CA 95828; (916) 381-7491.

TAMIYA

Isuzu Mu (Amigo)

This scale-accurate, 1/10-scale, sport utility vehicle has full-time, shaft-driven, 4WD mechanics and rugged performance. It's loaded with race-tested features such as debris-tight sealed gearboxes, centrally mounted 540 motor, front-wheel independent suspension, optional locking diff and much more! Also available are the Jeep® Wrangler and the Mitsubishi Pajero.

Part nos.—58152 (Isuzu), 58141 (Jeep®), 58132 (Mitsubishi); **prices**—\$300, \$300, \$272.

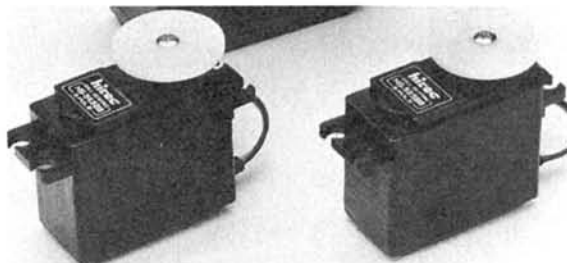
Tamiya America Inc., 2 Orion, Aliso Viejo, CA 92656-4200; (800) TAMIYA-A; fax (714) 362-2250.



HITEC

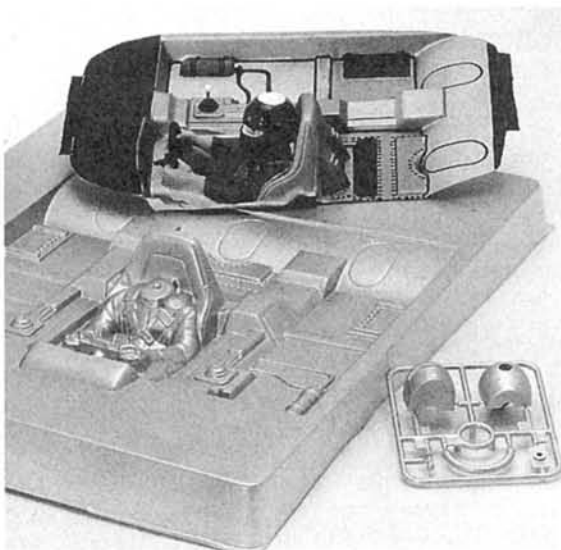
Steering Servos

The HS-525BB High Speed servo features a 5-pole motor, a top ball bearing, SMT construction and a custom-designed integrated circuit; it ensures that you get high performance from your 1/10-scale off-road and on-road vehicles. The HS-545BB Hi-Torque offers all the features of the HS-525BB, but it has a little more torque for more control in high-stress



situations—such as those found in 1/10-scale monster truck steering chores. They're both available in three connector styles.

Part nos.—HSE525BB, HSE0545BB; **price**—\$59.95 each. Hitec/RCD Inc., 10729 Wheatlands Ave., Ste. C, Santee, CA 92071-2854; (619) 258-4940; fax (619) 449-1002.



PARMA

1/10-Scale Universal Interior

This white-styrene, plastic interior features an injection-molded two-piece head, steering wheel and gear selector. Designed with versatility in mind, it can be trimmed for left- and right-hand-drive cars, and it will fit all 1/10-scale cars and trucks.

Part no.—10203; **price**—\$13.95.

Parma Intl. Inc., 13927 Progress Pkwy., North Royalton, OH 44133; (216) 237-8650; fax (216) 237-6333.

PRO-LINE

F-1 Hawgs

These tires allow the F1-kit owner to use a semi-pneumatic tire for added stability, traction, performance, consistency and realism. These aggressive Hawgs provide serious traction on unprepared asphalt and concrete surfaces. Made from XTR soft-compound rubber, they feature a Road Hawg street and parking-lot tread design. F1 semi-pneumatic wheels are also available.

Part nos.—1068 (front Hawg), 1069 (rear Hawg), 2587 (front wheel), 2588 (rear wheel); **prices**—\$11.50, \$12.50, \$5.95, \$5.95.

Pro-Line, P.O. Box 456, Beaumont, CA 92223; (909) 849-9781; fax (909) 849-2968.





TRUBLE SHOOTING

by John Huber

RC10MT

I'm 12 years old and have had an RC10T for about a year. I'm trying to turn it into a mega-monster truck. Could you tell me which tires and rims to buy? Also, the ball diff won't turn each wheel in the opposite direction. I've rebuilt it five times, but it just won't work! Keep up the good work! Great mag! RYAN SCAMMELL
Cazenovia, NY

OK, so you want to make it a mega-monster truck.... Where do we start? I'm sure you're thinking about huge tires. Well, before we get into that, let's get the diff working. In the tranny, there are two small bearings that have the same diameter, but one is thicker than the other. The *thin* bearing goes in the diff. If the wrong

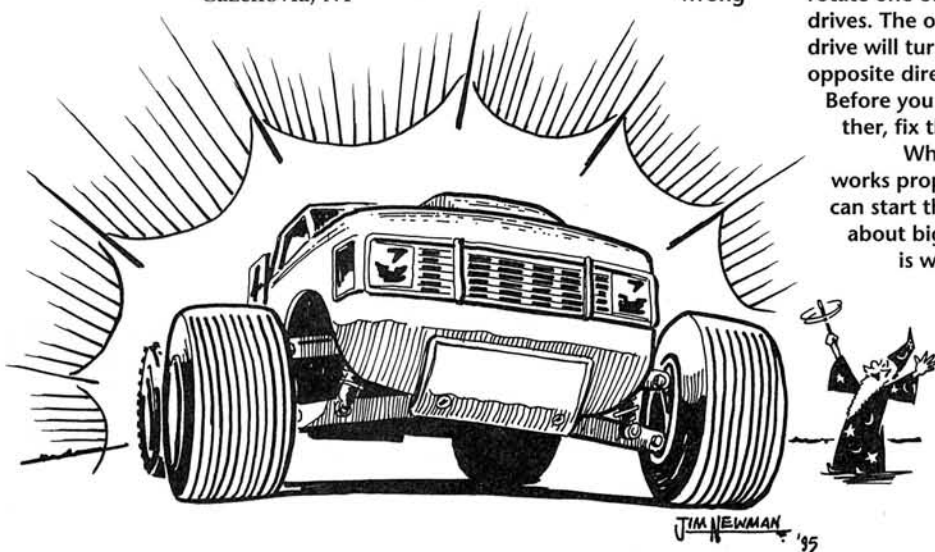
bearings are used in a part of the diff, it won't work properly. Read the instructions again, and make sure that you have the right bearings in the right place. Before you assemble the gearbox, test the diff to see whether it works correctly. To tell whether a diff has been set right, try this: hold the center gear and rotate one of the out-drives. The opposite out-drive will turn in the opposite direction.

Before you go any further, fix the diff.

When the diff works properly, you can start thinking about big tires. This is where you have to be creative. As far as I know, there

If you have a technical problem that your hobby shop or racing friends can't resolve, give us a shout at Radio Control Car Action, and we'll see if we can chase down an answer for you. Questions should be of a technical nature and should be addressed to Troubleshooting, Radio Control Car Action, 251 Danbury Road, Wilton CT 06897. We regret that, owing to the tremendous number of letters we receive, we can't respond to every one.

aren't any rims available to make the conversion, but you can make them by gluing a set of RC10 rims into a set for the Clod or the USA 1. You'll also have to alter the gear ratio to obtain the proper speed and acceleration. Your 10T is such a good racing truck that maybe you should just get a Clod and leave the 10T alone.



JITTERBUG

I've been into R/C'ing for nine years, and I love every minute of it. But I have a little problem, and you guys were the first I thought of writing to. I own a Yokomo Honda NSX with a Tekin 420F speed control, a KO Propo FXII stick radio and a Team Losi JR's Choice motor. My car jitters and goes wildly out of control when it's about 100 feet away from me. I don't know why this happens. I tried putting my receiver antenna in a variety of places, but nothing seemed to do the trick. What will?

My KO Propo radio has seen six or seven years of good service.

Could it be the cause of my problem? Is it too old? Could living two blocks from a power line cause any of the interference I've been having? Please *help!* This is the *only* magazine to read! JASON MAK
Coquitlam, Canada

Several factors might cause the interference you describe. One could be the power line. Just travel a couple of miles away from the lines and see whether you still have a problem. My next area of suspicion is the motor. The Losi JR's Choice motor hasn't been made for some time, and yours might be worn out. If you

can swap the motor for another one and test again, do so. If you have a problem even with a different motor, send

your radio back to its manufacturer to be re-tuned. It might have drifted too far from "tuned"; a simple calibration might be all it needs. There's also a chance that the crystals have been damaged, but the radio test should show whether this is the case.

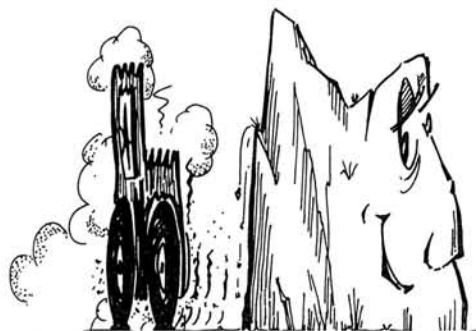




ROCK AND (NO) ROLL

I was running my RC10T at full speed, and I smashed it into a rock, and now it doesn't move. What's wrong with my car? How can I fix it? If you could help me out, I would appreciate it.

TERRY MCCARTHY
Bloomfield Hills, MI



Terry, here's a special checklist just for people who smash into rocks:

1. Check your motor's brushes for cracks or other damage. The brushes are the two, small, coppery looking things that transfer voltage from your battery to the motor's commutator. If they can't transfer the voltage, the motor won't work.
2. During the collision, your receiver's crystal may have become cracked. The easiest way to check this is to try another set of crystals. The crystals must be on your radio's band (27MHz or 75MHz) and be of the same type of modulation (AM or FM). Your hobby dealer should have a set that you can try. If not, ask an R/C friend.
3. You may have damaged your receiver, in which case, it will have to be sent back to the manufacturer for repair or replacement. Send your transmitter along with the receiver so that the technician can tune them properly.

BUDGET STOCKER

You have a terrific magazine. I'm 11 years old and recently bought a Traxxas Sledgehammer RTR. I'm on a \$25 budget. Can you recommend a stock motor that has a lot of low-end torque and speed but won't use up too much running time? I put in a set of Trinity bearings and was wondering if they need any type of lubrication.

RAMON LOPEZ JR.
Laredo, TX

Really, Ramon, any stock motor will work well; I can't think of one that I wouldn't recommend. If, however, you're looking specifically for low-end torque, avoid short-stack-armature motors, which generally achieve higher rpm at the cost of torque. These types of motors are very fast, but they must be geared carefully to avoid overheating.



Any Epic-based or Yokomo-based full-stack or slotted-stack armature stocker will work well. Look at Race Prep's line, too. Your local hobby shop can also tell you which of these motors have full-stack or slotted-stack armatures. Many racers feel that motors that use laydown-type brushes have a marginal torque advantage over those with stand-up brushes. Again, check with your dealer.

Bearings should periodically be cleaned and

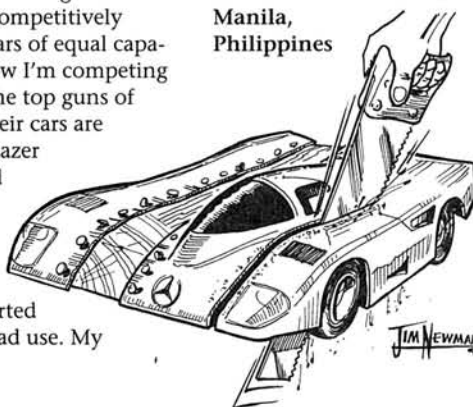
re-lubed. I prefer to slide the bearing over a tapered tool—such as the end of needle-nose pliers—and spray it with motor cleaner. After a shot of cleaner, I spin the bearing with my finger then spray it out again. I repeat this process until the bearing spins freely without a gritty sound and feel. One small drop of light oil applied to the bearing usually does the trick, but be careful not to over-lube it, because doing so will attract damaging dirt and grit.

GETTING WIDTH THE PROGRAM

I just bought a Tamiya 4WD ProMarkt C-Class Mercedes-Benz. I finished assembling it in two days and started to modify it one step at a time. I've already installed a full set of ball bearings, a rear-stabilizer set, a ball diff for the front gearbox and a torque-splitter set for a one-way bearing effect. I raced it competitively against cars of equal capability. Now I'm competing against the top guns of 4WD. Their cars are killers—Lazer ZXRs and Schumacher Cat 2000s—all converted for on-road use. My

problem is that when they "rub" me, my car rolls tremendously. Because it's a narrow chassis, I want to know if I can convert my TA02 into a TA02W. What are the major parts that I'll need? Thank you for your time and effort. I like your mag; it helps me a lot!

RONALD V. VILLAFLO
Manila, Philippines



Ronald, now that you race against full-width, serious competition cars, you should realize that your TA02 will be at a slight disadvantage. But, you've made some serious mods to your car that should even things up a bit. Converting to the TA02W is really easy; all you need are the front-steering uprights from the TA01 (part no. 0445098), different dog-bones (no. 9805470), new 5x11 bearings for the new uprights and the wider rear wheels from the new TA02W chassis (no. 50549). I think that these wheels are available only in the Nissan 300ZX, BBS-style.

ILLUSTRATIONS BY JIM NEWMAN

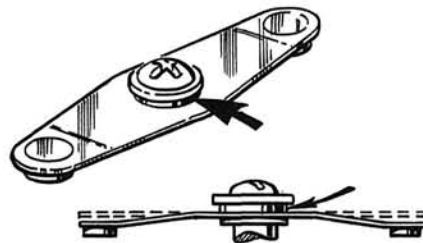


FAST-FILL BOTTLE

Get a soft polyethylene bottle, and drill a tight-fitting hole in the cap. Force-fit a length of silicone rubber fuel line through the hole, and smear silicone sealer inside and outside around where the line passes through the cap.

Use a roofing nail or ball-point pen to plug the pipe.

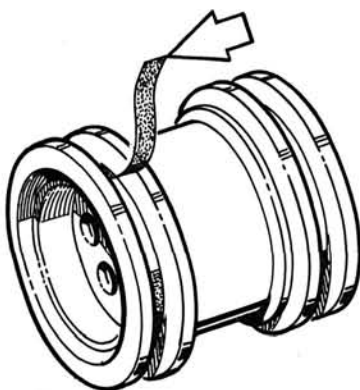
Dave Smith, St. Charles, IL



BETTER CONTROLLER CONTACT

To cure erratic mechanical speed control performance, bend the leaf spring arms down slightly as shown; keep the contact buttons parallel to the resistor part, and add a copper washer (arrow) from a glow plug.

Adrian Duran, Zapata, TX



NO-GLUE TIRE BOND

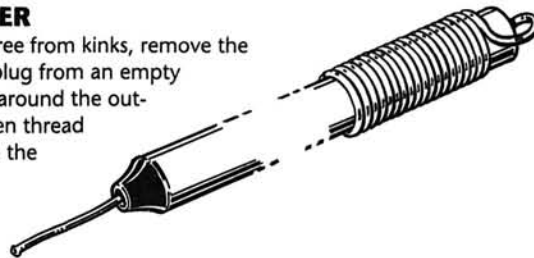
To firmly bond your tires to the rims, use a narrow strip of double-sided carpet tape.

Chris Toledo, Pismo Beach, CA

SOLDER HOLDER

To keep the solder free from kinks, remove the ball point and end plug from an empty pen, coil the solder around the outside of the body, then thread the tail end through the center.

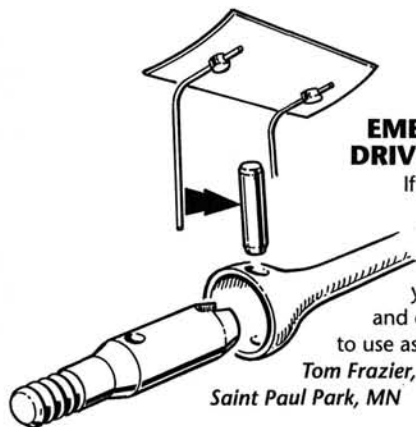
Daniel Diaz, Redondo Beach, CA



TRANSMITTER CARRY BAG

To protect your transmitter from dirt and damage, carry it in one of those new canvas grocery-store bags.

Nick Gwozdz, Westford, VT



EMERGENCY DRIVE PIN

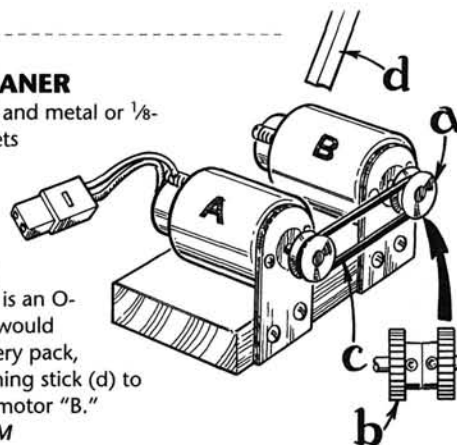
If you need a replacement pin, check the diameter of your wing wire, and cut a short piece to use as a spare.

Tom Frazier, Saint Paul Park, MN

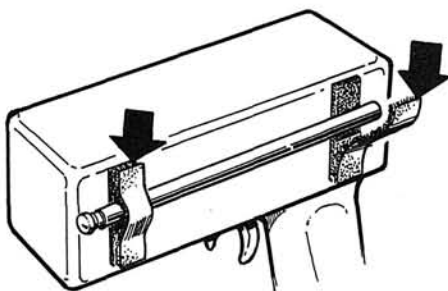
BUDGET COMM CLEANER

Use surplus-store pulleys (a) and metal or 1/8-inch (3mm) plywood brackets screwed to a wood base to attach an old motor "A" to a drive motor "B." If you can't find pulleys, mount two pinion gears (b) back to back. The drive belt is an O-ring (c), but a rubber band would also work. Plug in your battery pack, and use a commutator cleaning stick (d) to brighten up that comm on motor "B."

Ed Gartner, Albuquerque, NM



Radio Control Car Action will give a one-year subscription (or one-year renewal if you already subscribe) for each idea used in "Pit Tips." Send a rough sketch to Jim Newman, c/o *Radio Control Car Action*, 251 Danbury Rd., Wilton, CT 06897-3035. BE SURE YOUR NAME AND ADDRESS ARE CLEARLY PRINTED ON EACH SKETCH, PHOTO AND NOTE YOU SUBMIT. We're unable to publish many good tips because we don't have the sender's name and address. Please note: because of the number of ideas we receive, we can neither acknowledge every one, nor can we return unused material.



ANTENNA STOWAGE

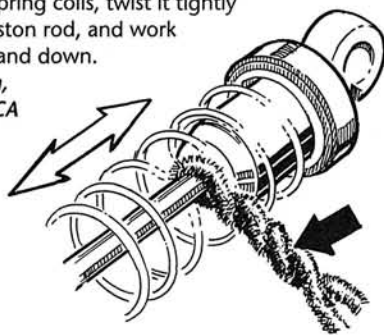
For secure antenna stowage, stick two pieces of Velcro®-brand fastener on the rear of your transmitter, then trap the detached antenna between those pieces and their mates.

Brian Knutson, Eden Prairie, MN

SHOCK-ROD CLEANER

To thoroughly clean grease and dirt off the piston rod, pass a pipe cleaner through the spring coils, twist it tightly around the piston rod, and work the shock up and down.

*Jesse Cameron,
Palm Desert, CA*



CARBURETOR PLUGS

To prevent dirt from entering the intake of your gas engine's carb

while your car is being cleaned, roll cheap, foam earplugs into a wedge and insert them into the carb intake. The plugs will swell and form a seal.

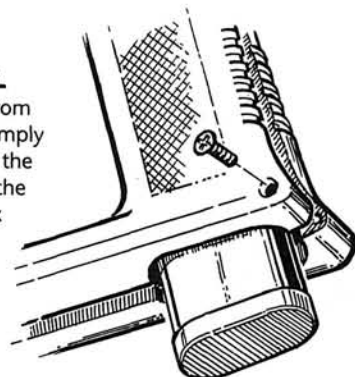
*Nick Sosin,
Philadelphia, PA*



EZ PACK REMOVAL

To easily remove Ni-Cds from the Futaba Magnum Jr., simply undo the bottom screw of the transmitter grip, separate the halves, and allow the pack to slip out.

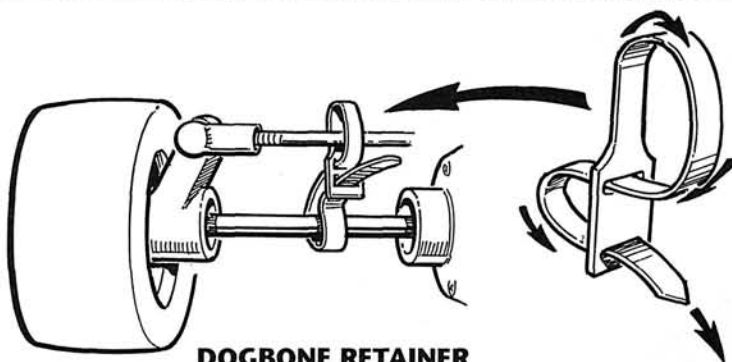
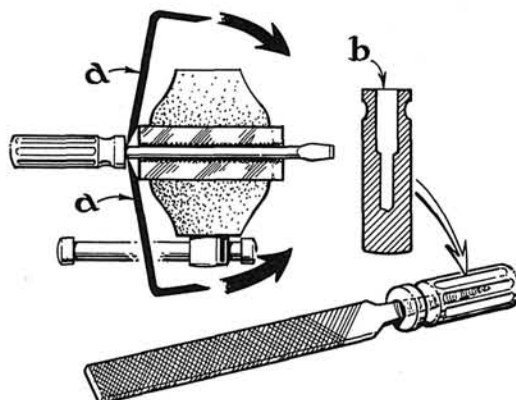
*Miguel Hernandez,
Pastores, Mexico*



RECYCLED HANDLES

For safe, comfortable filing, use two pry bars (a) placed against vise jaws to pry off old screwdriver handles, then step drill them as shown (b), and tap them onto your file tangs. To help seat the tangs into the handles, heat them to soften the plastic handles.

Tom Hubbard, Templeton, CA



DOGBOONE RETAINER

Pass a Radio Shack reusable cable tie (part no. 278-1646) around the camber link and dogbone as shown, and secure it in the third-from-the-last hole. Keep the tie just tight enough to hold the link if it pops out while on the track.

David Beesley, W. Midlands, England



GETTING STARTED

by John Howell

Stick It To It

In yet another awe-inspiring edition of "Getting Started," we'll talk about using servo tape and Velcro®-brand fasteners to secure your electronics in your R/C vehicle. C'mon now, try

to contain your excitement! All kidding aside, mounting your electronics properly in your vehicle is very important. It's not a pretty sight if you're out bopping around with your ride, and you happen to notice it's dragging

your receiver or ESC around in the dirt, and looking like some sort of odd "Just Married" R/C car. So, with that in mind, here are some helpful hints that should keep your gear in place.

VELCRO® VS. SERVO TAPE

Some people swear by servo tape to mount their radio gear because things stay put; others swear by Velcro® because it stays put and lets you pull out the radio gear more easily. Here's my take on the Velcro® versus servo-tape war.

• Velcro® is preferable if you have more than one car and a limited supply of radio gear. It works especially well

on receivers. Apparently, the Velcro® acts as a cushion of sorts, and some racers have commented that they get better over-all radio reception and fewer radio hits when their receiver is mounted on Velcro®. Note: never use Velcro® on your steering servo; it doesn't have enough "grab" to hold a servo down while the servo is moving your tires.

• Use servo tape to fasten items such as switches, ESCs and also receivers; it also works well on servos (unless you use servo-mounting blocks). If something has to *really* stay put, servo tape is the only way to go. The only drawback is that if you have more than one car and only one radio-gear setup, it's harder to take the radio gear in and out of the vehicle. Servo tape, when used correctly, can hold down almost anything in your vehicle, and that brings us to the next hint.

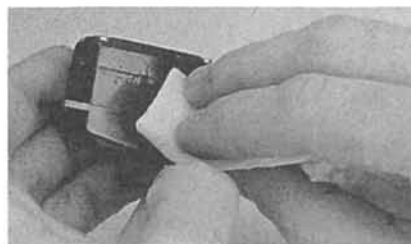
USING AND REMOVING SERVO TAPE

If you ever need to mount servos, switches, or anything else with servo tape, here's how to do it the right way.

• First, clean the mounting surfaces of the chassis and the item that you want to mount in your car using a rag or paper towel and some contact cleaner or motor spray. Spray a small amount of the cleaner onto the rag (not

directly onto the chassis or the item that you're mounting).

• After both sides have been totally cleaned, cut a strip of servo tape that completely covers the bottom of the item that you're mounting. Don't touch the sticky side of the servo tape because oil from your hands can make the tape less sticky. • Make sure that you put tape on the part before you toss it into your car; not the other way around! But before you



Never affix servo tape to a dirty surface; spray some motor cleaner or contact cleaner on a rag and completely clean all surfaces to which you're going to affix the servo tape.

plop on the tape, heat it with a hairdryer to make it really sticky. (Be careful though: hairdryers can put out quite a bit of heat at close range.)

• Remove the backing from the servo tape, and heat the other side with your hairdryer again. When it's heated up, place the tape in your car. Make sure that you've lined everything up properly; once it's in, it's in! Press down hard to make sure it sticks properly.

• Once the part has been installed, you might want to go the extra mile by securing it even more firmly with a tiny bit of Shoe-Goo. For those who are not familiar with Shoe-Goo, it's sort of like rubber cement, but it's stronger and can be removed. If you're mount-

This tube of Goo works wonders. Use a little bead of this stuff on the edge of the servo tape to further secure your servos, ESCs and switches when they've been mounted.

ing a servo, receiver, or ESC, run a thin bead around the base of it. If you're mounting an ESC switch, run a small bead over the top of the switch; but make sure that the switch mechanism itself isn't covered with Goo! After the Shoe-Goo has dried, you're all set, and your equipment won't be going anywhere.

REMOVAL

• Removing something that has been servo-taped into your car isn't too tricky. Just be careful that you don't press too hard on the component when you remove it, or you risk damaging the equipment. I found that the best method (at least for me) is to wedge a small flathead screwdriver between the chassis and the part in a few spots to weaken the hold of the servo tape. When the tape has been loosened up a bit, I pry the screwdriver underneath it again and carefully try to pop it off.

• When the component has been removed from the car, use a hairdryer to heat the tape residue; this allows it to come off easily and in one piece. ■

Servo tape gives you a better grip than Velcro®. The only drawback to using servo tape is that you can't transfer radio gear in and out of your car as quickly as with Velcro®.

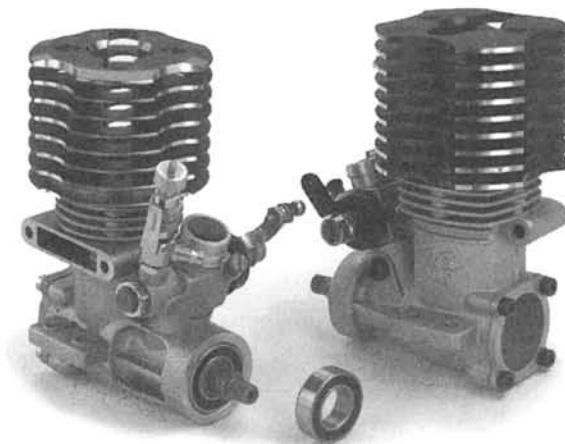
Velcro® works well if you need to take your radio gear in and out of your car frequently. Apparently, it also works well when you use it to mount receivers; you get fewer radio hits.



Neat Stuff!

Every month, I search for cool stuff to tell you about in "Nitro News." Sometimes I find things easily; other times, I have to do some searching. I often find good stuff in Horizon's dealer newsletter, "Product Focus." This month, I saw a cool idea for us nitro heads: Dynamite's* Super Seal engine bearings.

Dirt is bad for engines—duh! It doesn't take a rocket scientist to figure that out, but there's more than one way for dirt to find its way inside an engine. Your air intake is the first place from which dirt might enter. That's why



Dynamite's Super Seal bearing fits most .12 engines including the TNT and O.S. shown here.

you have a good air filter on your carb. Dirt can also find its way into your fuel, but your fuel filter should handle it. But did you ever consider that your front bearing might be sucking in dirt?

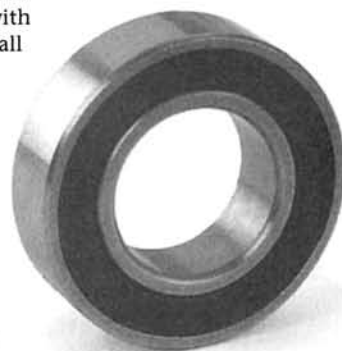
Yes, it can happen.

Most engines (especially the smaller .12s) use metal-shielded ball bearings. Though they do seal out the dirt pretty well, they aren't truly sealed. To be fully sealed, the front shield must touch the inner and outer races of the bearings, and this just doesn't happen with metal shields. The small gap between the shield and the inner race is where the trouble starts.

As an engine runs, it sucks air through the carburetor. If the seal isn't good, air (and fine dust) can also be sucked into the front bearing. The air can cause erratic performance and make tuning a chore, and the dirt will abrade the bearing and the engine's internal parts. Another problem can occur when the engine's front bearing isn't sealed: fuel can find its way out and onto your chassis. (This is commonly called a wet-nosed engine.) The fuel is flung all over the inside of the body as the engine runs, thoroughly soaking everything in its path. Sealing the bearing is the only solution for these problems.

Most racing .21 engines, such as the O.S. RX-B and the Picco, use a rubber-sealed front bearing. Why not use them for smaller engines? Well, with the introduction of their Super Seal bearings for the TNT, CZ-R and CZ-Z engines, Dynamite has done just that.

The bearings have dual rubber seals and are rated class 7. They're permanently lubricated, and they'll prevent even the smallest particles of dirt from entering the engine. The bearing and installation instructions cost a measly \$8.99. That's a great price when you consider the cost of a stock replacement, and this one should last a lot longer and protect the internal components better. The manufacturer's test-



A rubber seal prevents dirt from entering your engine and makes tuning easier.

ing has shown that, with these bearings, engines idle better and transitions to higher rpm are smoother. Setting low-end needles also becomes a bit easier. They don't provide any noticeable speed gains, but if making your engine last means anything, these bearings are worth it!

*Addresses are listed alphabetically in the Index of Manufacturers on page 160. ■

NITRO Q&A

In the past, I've owned a Tamiya Blackfoot, a Kyosho Maxxum and a Kyosho Ultima. I'm now interested in some gas-powered R/Cs. I know next to nothing about R/C gas, so I have a few questions:

- What's a recoil-started engine?
- Do I need a separate starter and, if so, does it need a battery?
- How long can you run a gas-powered R/C until you run out of gas?

- I won't be competing, so will 5 percent nitro be sufficient?

ERIC BICKETT

Kunsan, Republic of Korea

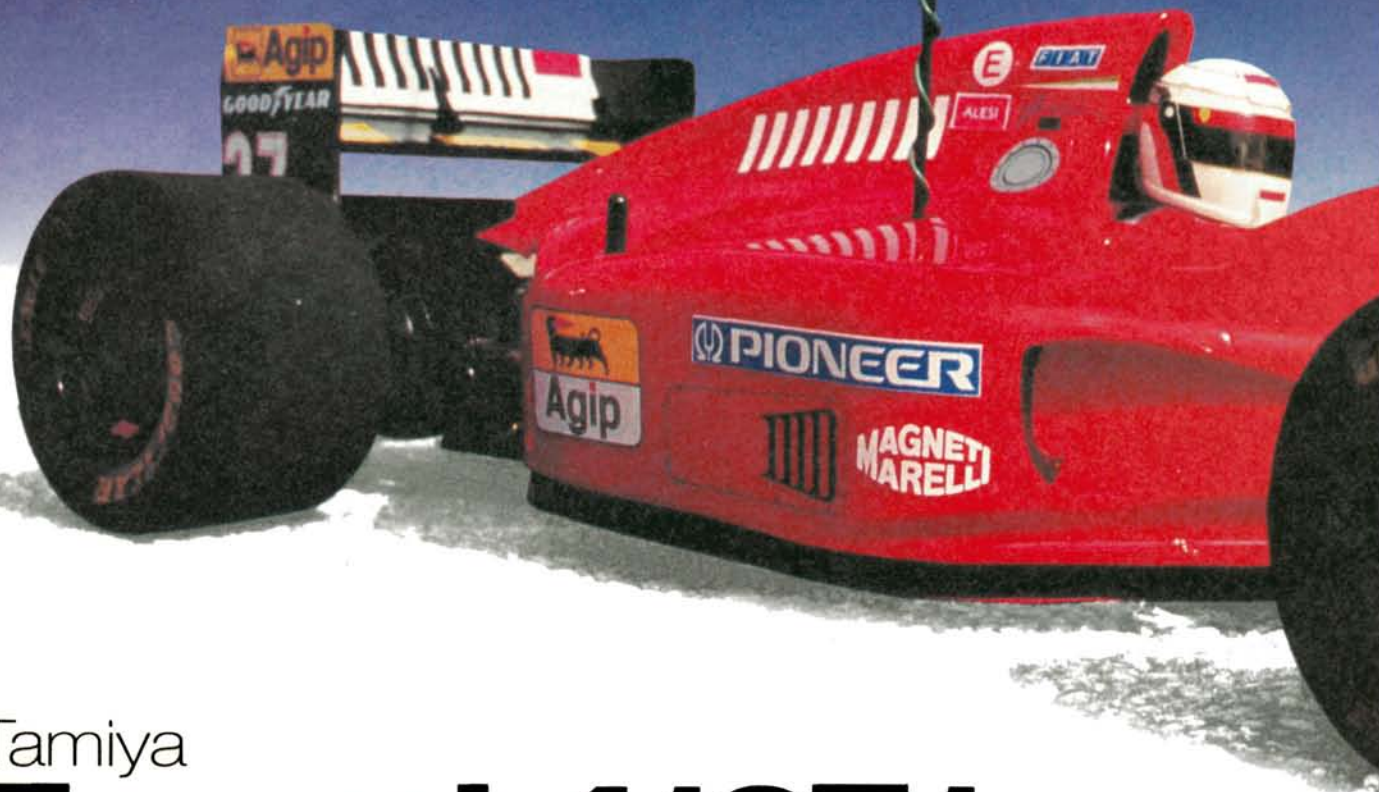
Eric, a recoil starter is the kind that you find on a lawnmower. To start the engine, you pull the cord, and it recoils back inside

where it's ready for the next pull. With this type of starting system, you need only a glow-plug driver and fuel. Electric starters have a spinning rubber wheel that you bump against the flywheel, and this starts the engine. This type of starter needs either a car battery or a portable 12V battery for power.

How long a nitro-powered car runs depends on a few factors. First is the tank size: the bigger it is, the longer the run times will be. Other factors include the size of the engine, the mixture settings and the type of driving you do. Most cars run between 6 and 12 minutes on a tank of fuel and can be refueled in a couple of seconds while the engine is still running. Five-percent-nitro fuel is fine for fun running. Have fun. JH

Got a question about gas?

Send your letters to Nitro Q&A, R/C Car Action, 251 Danbury Rd., Wilton, CT 06897.



Tamiya **Ferrari 412T1** **Formula 1 Racer**

by Rick Schwartz

THE NAME FERRARI is synonymous with racing and speed. The black-stallion logo has been on winning cars for decades, and the famous Ferrari red paint is associated with heart-stopping, thunder-pounding excitement. Tamiya* America must agree, because its latest release for the F1 parking-lot circuit is the Ferrari 412T1.

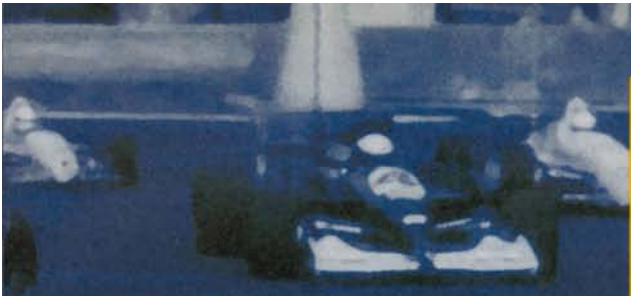
KIT FEATURES

Typical of Tamiya products, the kit and instructions are of the highest quality. After laying out all the parts and thoroughly reading the manual, I started on what I consider the most difficult part of building an R/C racer—the painting. The supplied polycarbonate body

is gorgeous. Unique to this particular body style are the separate nose cowl, the air intake and the optional side air ducts. Although they add a lot of realism to the finished body, they are fairly fragile and must be handled with great care. All three parts are held on with double-sided tape and, as I found out later, can pop off under racing conditions (more about that later). After it has been painted and the decals have been applied, you'll be rewarded for the time you took to complete it properly. It's dynamite!

After I had set the finished body aside in a safe place (away from all pets and small children), I started on the main construction. This kit has all the latest upgrades and uses the new F103 chassis. It's com-

PHOTOS BY RICK SCHWARTZ



Completely redesigned to meet the new 1994 regulations regarding passive suspension systems, the Ferrari 412T1 Formula 1 racer is a technological wonder. It has 4W independent pushrod suspension, a carbon-fiber monocoque chassis, self-ventilated carbon disk brakes and a transverse 6-speed titanium transmission with sequential electronically controlled semiautomatic shifting.

The real heart of the racer is the engine, and it's a monster. It's a mid-rear, longitudinal, V12 that delivers more than 700hp. With four overhead cams and four valves per cylinder, it's a screamer. Digital electronic fuel injection and a Magneti Marelli static electronic ignition provide fuel and spark.

Under new management and with two top drivers—Gerhard Berger and Jean Alesi—the Ferrari Formula 1 team is back in the hunt for the checkered flag. It looks as though they have the car to do it.

THE REAL THING

SPECIFICATIONS

Scale	1/10
List price	\$268
DIMENSIONS	
Overall length	15½ in.
Wheelbase	10¼ in.
Width	7¾ in.
Height	4 in.
WEIGHT	
—w/o battery and radio	23 oz.
CHASSIS	
Type	Double-deck F103
Material	FRP (fiberglass-reinforced plastic)

BODY	
Type	Ferrari 412T1
Material	Polycarbonate
DRIVE TRAIN	
Type	Direct drive
Differential	Ball
SUSPENSION	
Front	Springs over kingpins
Rear	Triple-disk friction damper
WHEELS (F/R)	
Plastic-honeycomb replicas	
TIRES (F/R)	
Pre-trued on-road foams	
ELECTRICS	
Motor	Stock 540 Mabuchi



The stock ball diff is smooth and precise, but the optional set of bearings makes the action even smoother.

pletely different from its predecessor, the F102. Made of fiberglass-reinforced plastic, its narrower main chassis plate is lighter. The battery holder has been moved farther back for more evenly distributed weight, and it has been changed to a "captive type," which means that it holds the battery with retaining clips rather than zip-ties. This new style also allows you to use battery assemblies other than stick-type.

The front suspension has also been changed for better handling. It's a one-piece unit that has bottom-mounted coil springs over the kingpin for smoother movement and quicker response. The springs are held on by a C-clip. Make sure you have a clean, large area to complete this assembly. Both the clip and the spring tend to fly.

Adding to the improved front-end handling is a center-mounted upright steering-servo holder. No screws are necessary for installation—just double-sided tape. Finishing off the front steering assembly are new equal-length steering tie rods.

The rear drive train also has some

improvements over the 102 chassis. The diff is adjustable, and it's lighter and more compact than in the previous model. The metal rear axle is supported by two sealed ball bearings (the only ball bearings supplied in the kit), and the diff thrust assembly is mounted on the rear rim for easy access. Another improvement is an offset rear pod, which puts the motor in the center for better handling and weight distribution.

The front and rear wings are made of molded plastic and are bolted right to the chassis. (No chance of their popping off after completion.) The rear wing is adjustable for different racing conditions. The wings are very realistic and add a lot to the car's overall appearance.

The main difference between the 102 model and the newer 103 model is the rear suspension components. The 102 featured an oil-filled damper. The Ferrari uses an adjustable triple-disk damper. This unit is similar to the one that's found on the Associated 10L, and it provides a more

Building and Setup Tips

- Use Loctite on the setscrews when you attach the wheel stopper and the diff joint shaft to the rear axle.
- Select either of the two recommended locations for rear damper attachment. Don't try to squeeze in your electronics.
- Try some Shoe-Goo or silicone when you mount the servo.
- Be extremely careful when you trim the nose cowl, the air intake and the optional air ducts; these parts are very expensive.
- Keep your ESC and battery wires short; there's not a lot of room under the body.

THINGS YOU'LL NEED

- 2-channel radio
- Servo
- Speed control
- 7.2V Ni-Cd battery
- Battery charger

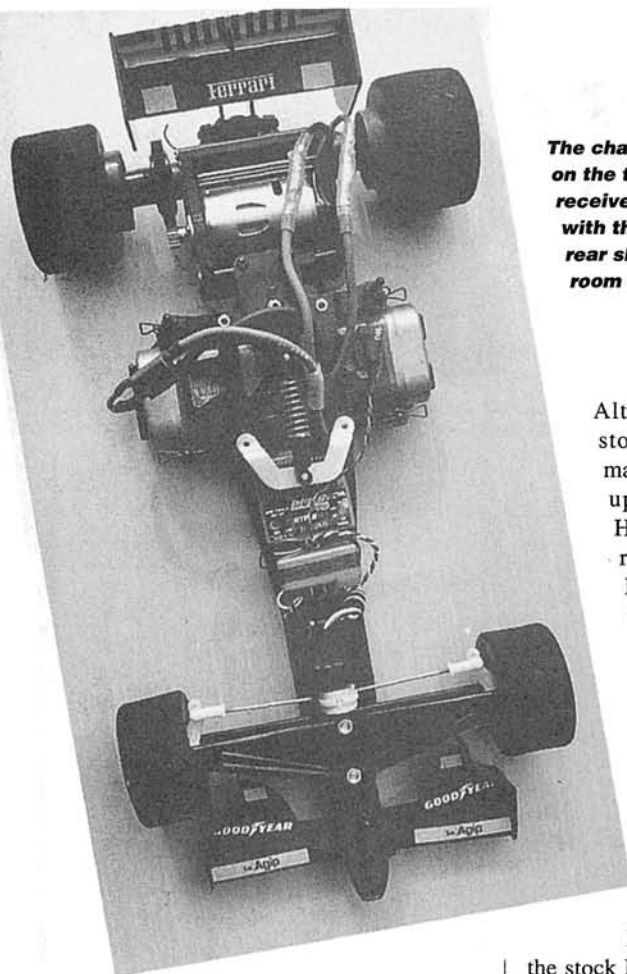


The Tamiya Ferrari's 103 chassis has a nicely designed front end. The wing is an exact replica of the wing found on the real 412T1.

THE COMPETITION

	Kyosho Impress	Tamiya Ferrari	HPI Super F1
Wheelbase (in.)	9.8	10.25	10
Width (in.)	7.9	7.75	7.75(F)/8.25(R)
Weight	2 lb., 2 oz.	1 lb., 7 oz.	2 lb., 4 oz.
Diff type	Ball	Ball	Ball
Chassis	Fiberglass	Fiberglass	Graphite
List price	\$199	\$268	\$285
Available at*	\$149	\$165**	\$169 to \$179
Issue reviewed	2/95	10/95	8/95

*Prices may vary with location. **Different body styles are available.



The chassis layout is simple but a little on the tight side. I had to mount the receiver on its side to fit it in there with the ESC. I also used the raised rear shock mount to provide more room on the chassis for electronics.

Although I tested the car as box stock, I tried, as I always do, to match my system to possible future upgrades. I used the Novak* Hammer Pro ESC and Polaris receiver coupled with a Futaba* Magnum Jr. radio and 148 servo. My battery was a 1400 six-pack from World Class*, and my connectors were Deans* Ultra Plugs. At least I knew the power would flow smoothly.

PERFORMANCE

To break the car in and get used to its handling characteristics, I did my initial test in a local parking lot.

It drove like a dream. Even with the stock Mabuchi motor, it zipped around the lot, seemingly stuck to the pavement with glue.

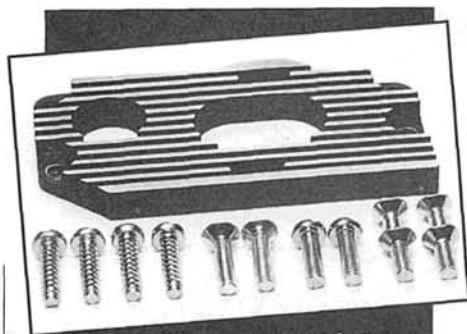
The real test came at a club race at the Miami R/C Speedway. Most of the racers used aftermarket parts and modified motors, but my red demon didn't get lost in the shuffle. The car handled well and responded immediately to my throttle and steering commands. I don't think it's possible to roll this car. With too much juice, you may fishtail and spin, but the car's aerodynamic styling will keep it on the pavement. It had plenty of battery left after having run the full five minutes of the race. The diff can be tightened for use with a stock motor, but a change to modified may require a little adjustment. The only problem I had during the race was with the body. The two-

even side-to-side weight transfer for better rear traction. The damping rate can be altered by using different shock oils or Teflon™ tape. The directions call for mounting the front of the damper in either one of two locations, depending on the type of electronics used. Because of the limited room, either location will suffice and will provide similar handling.

With the Tamiya two-sided tape that's included in the kit, mounting the tires is fairly simple. The tape is very thin, but it really does have two sticky sides. Again, take your time and peel carefully.

TEST GEAR

Selecting electronic and radio gear was my final step in preparation for the track.



Tamiya offers many killer hop-ups for their F1 cars, such as this aluminum heat-sink motor mount.

FACTORY OPTIONS

- 6mm rear carbon shaft—no. 53116
- Turnbuckles and tie rods—53150
- Ball-bearing set—53158
- Low-friction damper—53173
- Aluminum motor mount—53183

piece nose and optional air ducts popped off when they tangled with another car.

FINAL THOUGHTS

This car is a blast! It's realistic-looking, and it performs like a champion—the best of both worlds. Whether you're a beginner or a dyed-in-the-wool racer, you should check this car out. It's easy to build and maintain and is competitive right out of the box. There are plenty of upgrades, but they're not necessary in the stock class. Besides, there's nothing cooler than cruising around the track or your neighborhood in a bright-red Ferrari 412T1 Formula 1 racer.

*Addresses are listed alphabetically in the Index of Manufacturers on page 160.

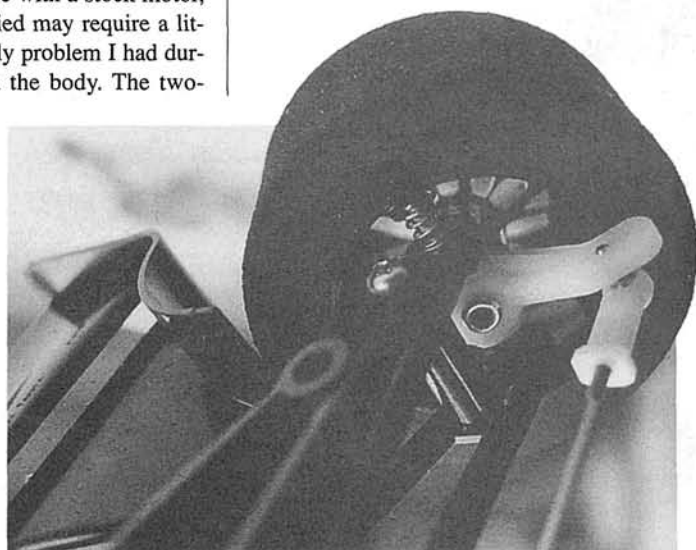
likes

- Realistic appearance.
- Easy assembly.
- Out-of-the-box performance.
- A blast to drive.

dislikes

- Body too fragile for competition.
- More hop-ups than I can afford.

The front suspension on the Ferrari 412T1 consists of a simple coil spring that's mounted underneath the front arms. To alter the suspension, several types of spring are available from Tamiya and others.





KYOSHO Outrage ST

by Brian Leslie

KYOSHO'S* latest entry-level vehicle—the Outrage ST 1/10-scale electric stadium truck—is tough and durable and is decked out with features that novices will appreciate.

KIT FEATURES

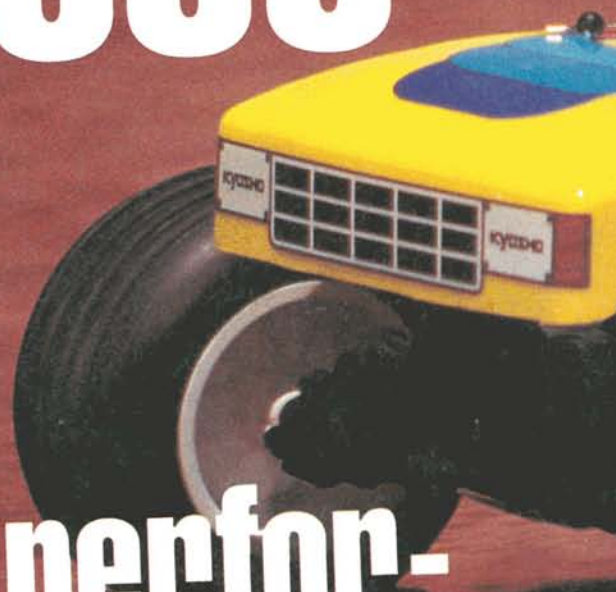
As usual, Kyosho has put together a kit that's straightforward and easy to build. It boasts excellent instructions that are backed by step-by-step illustrations. If you've never built an R/C car or truck, don't worry; these instructions will make it seem easy.

- **Design.** The Outrage ST chassis uses a hard-plastic, double-deck design that's ribbed for stiffness. The upper deck also supports the front shock tower, the steering assembly, the rear bulkhead and the battery pack.

All four corners of the truck sport plastic, oil-filled, coil-over shocks mounted on independent suspension arms at each wheel. To adjust ride height, snap-in spacers are used instead of the conventional slide-type shock collars. Solid, non-adjustable, upper control links support the hub carriers. All the suspension parts are plastic, including the rear bulkhead, which supports the upper shock mounts and the upper control links.

- **Transmission.** The transmission casing stiffens the chassis and supports the body mount. The transmission houses a planetary-type differential, which doesn't offer the performance of a ball differential, but it gets the job done. The planetary-style diff is noted for its four, rugged, steel bevel gears, which provide many hours of run time between rebuilds. The differential and accompanying gears are supported by metal bushings. Mounted on and behind the transmission case is a steel motor plate. Placing the motor at the very rear of the truck provides additional weight on the rear tires for good traction. Dogbones deliver the power from the transmission to the rear wheels.

OUTRAGE ST



performance
for the
price

SCALE 1/10

LIST PRICE \$159.99

DIMENSIONS

Overall length 14.5 in.

Wheelbase 10.75 in.

Front width 9.125 in.

Rear width 9.25 in.

WEIGHT (gross, RTR) 3 lb., 9 oz.

CHASSIS

Type Double-deck plate

Material Kelron

DRIVE TRAIN

Type Pinion/spur

Primary 2-gear

Differential Planetary

Bearings/bushings Plastic bushings

SUSPENSION (F/R)

Type Lower A-arm with upper link

Damping Oil-filled, coil-over shocks

WHEELS (F/R)

Type One-piece dish

Dimensions (DxW) 2.2x2

TIRES

Front Ribbed

Rear Pin-spike

ELECTRICS

Motor Mabuchi RS-540SH

Battery Not included

Speed control Rotary mechanical



**BUILDING
& SETUP
TIPS**

■ Don't over-tighten the screws that are used to mount the suspension components. Make sure the upper control rods and the suspension-arm hinges move freely.

■ To obtain the best performance from the suspension, proper assembly of the shocks and suspension arms is vital. When building the shocks, it's very important to make sure there are no burrs on the shock pistons. The slightest protrusion would severely hinder the shock's damping action. When the shock has been put together, it should move freely and smoothly up and down the full length of travel. For even better performance, use a 25WT or 30WT silicone shock oil instead of the oil supplied with the kit.

■ When building the differential, be sure to loosen the four cover screws 1/4 turn after having fully tightened them. If these screws are too tight, the diff action will be stiff and rough.

■ I disagreed with only one part of the instructions. In Step 8, during the rear-suspension-arm installation, the instructions tell you to apply grease to the dogbones or swingshaft ends. Because these parts will be exposed to the elements, I recommend that you leave them dry. Grease will only attract dirt, which will cause unnecessary wear on the axles, outdrive hubs and swingshaft ball ends.

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• **Front end.** Up front, the Outrage ST uses the bellcrank steering system found in most off-road cars and trucks. One bellcrank has a built-in servo-saver, and both are linked together with a solid tie rod. Non-adjustable tie rods, such as those used for the upper control links, connect the front hub carriers to the bellcrank. There's one good thing about solid non-adjustable tie rods: you never have to worry about making toe-in adjustments.

Likes

- The kit is very easy to assemble, and the instructions are excellent.
- The body and decals look great.
- The wheels and tires are of good quality and supply plenty of traction.

Dislikes

- Metal bushings to support the wheels would be a plus.
- Lacks certain racing features, i.e., adjustable turnbuckles and ball diff, that are found on other competitively priced entry-level stadium trucks.



The Kyosho Outrage ST is equipped with a durable mechanical rotary speed control.

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STEALTH

B A T T E R I E S

• **Wheels.** The Outrage ST features one-piece rims. The rear tires are pin-spikes, and foam inserts are used to stiffen the sidewalls. Up front, foam inserts are used with a four-rib-style tire. To support the axles and wheels, the hub carriers have plastic bushings.

• **Power.** Kyosho includes a Mabuchi RS-540SH motor, which comes with the capac-

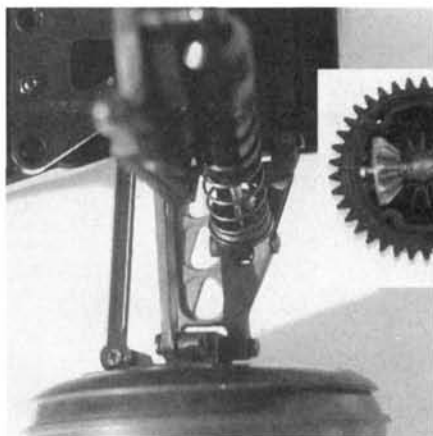
itors and wires already soldered to the motor terminals. On the other end of the wires are bullet-type plugs, which are used to pass the juice from the included rotary-style mechanical speed control to

Factory Options

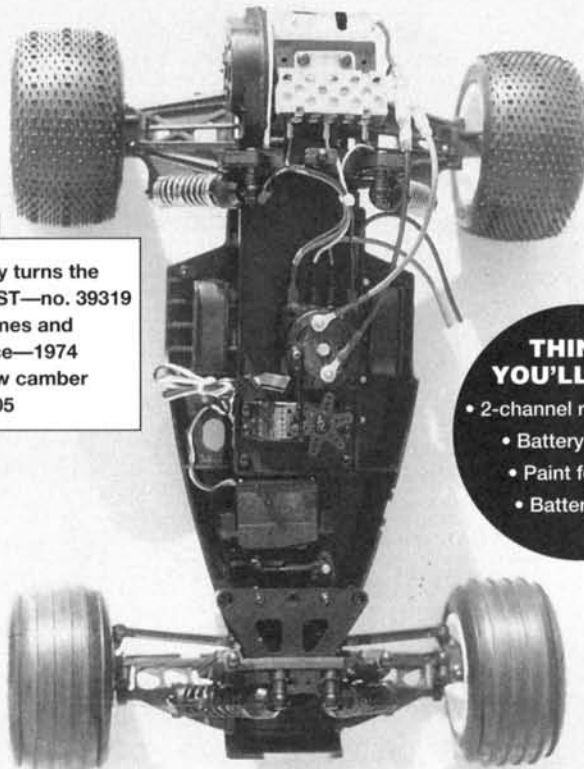
- A gas conversion kit; it basically turns the Outrage ST into a Sandmaster ST—no. 39319
- Bearings would increase run times and improve the truck's performance—1974
- A set of turnbuckles would allow camber and toe-in adjustments—W-5005

the motor. The speed control is a well-built, two-piece unit that has three speeds forward and one reverse.

• **Decals.** The decals provided with the kit are nice-looking and come in two shades of blue. To adorn the inside of the well-detailed Chevy polycarbonate body, I chose Pactra® R/C spray paints. I used fluorescent yellow (no. RC279) to offset the blue decal stripes and backed up the yellow with solid white (RC251), which really brought out the brightness of the fluorescent yellow.



Non-adjustable links prevent you from adjusting toe-in and toe-out. When and if you decide to, the links can be upgraded to adjustable turnbuckles.



THINGS YOU'LL NEED

- 2-channel radio system
- Battery charger
- Paint for body
- Battery pack

TEST GEAR

To control the Outrage ST, I chose the Futaba® Magnum Jr. radio system with Futaba 9301 servos to handle the steering and throttle duties. A 1400mAh sport battery pack supplied the juice to the stock motor. To guide the power from the battery pack to the motor, I used the included mechanical speed control.

A planetary gear diff transfers the driving force to the rear wheels.

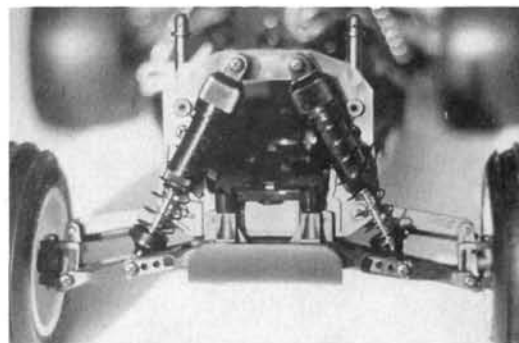
would feel most at home—my backyard. I charged up a couple of packs and headed to the test scene. It had been a long time since I had run an R/C car without an electronic

speed control. I was eager to see how the mechanical speed control would perform. To my amazement, the throttle response was good, and it was neat to have reverse.

I ventured onto the pavement, and that made for some great reverse spins and 360s. The truck handled well on the pavement, so beginners shouldn't have any trouble running it. The powerful Mabuchi motor supplied more than enough juice to kick out the rear end for some great power slides through the corners. Unfortunately, my testing ground didn't have much to offer in the way of jumps, but I'm sure the long, high-volume, oil-filled shocks could handle almost any obstacles a backyard could produce.

FINAL THOUGHTS

The Outrage ST ran well and performed flawlessly. At the end of my tests, I didn't find any broken or loose parts. Beginners will find the Outrage ST easy to build and easy to drive—two key items when getting started in R/C. For its price, the Outrage ST offers a lot of performance and



Both front and rear plastic, oil-filled, coil-over shocks absorb plenty of punishment.

PERFORMANCE

The truck isn't made for full-blown racing, so I gave it a workout where it

features; however, for a bit more money, some of the newer budget stadium trucks come equipped with racing-type hardware such as ball diffs and slipper clutches (a ball diff is optional on the Outrage ST)—something to think about if you see racing in your future.

Overall, the Outrage ST succeeds in its mission as a low-priced, straightforward truck that gives newcomers a good start on the ladder of off-road R/C, and it can be made more formidable through Kyosho's extensive line of hop-up parts.

*Addresses are listed alphabetically in the Index of Manufacturers on page 160. ■

THE COMPETITION

	TRAXXAS RUSTLER	MRC MT 10S	ASSOCIATED RC10ST	KYOSHO OUTRAGE ST
Wheelbase (in.)	11.625	13.00	11.375	10.75
Width (in.)	12.125	13.00	12.50	11.25
Weight	4 lb., 3 oz.	4 lb., 2 oz.	3 lb., 15.40 oz.	3 lb., 9 oz.
Diff type	Planetary gear	Ball	Ball	Planetary gear
Chassis	Composite plastic	Composite plastic	Aluminum	Keltron
List price	\$150	N/A	\$240	\$159.99
Available at*	\$89.99	\$110	\$119.99	\$99.99
Reviewed in	5/95	1/95	3/95	10/95

*Prices vary with location.



SCALE 1/10
LIST PRICE \$350

DIMENSIONS

Length (overall) 15 in.
Wheelbase 10.5 in.
Width (F) 8.4 in.
Width (R) 7.9 in.

WEIGHT

(gross, RTR) 3 lb., 8 oz.

CHASSIS

Type Dual-plane plate
Material Fiberglass

DRIVE TRAIN

Type Sealed gear
Primary Pinion/spur
Transmission Gear
Differential(s) Adjustable ball
Slipper clutch Yes
Bearings/bushings Ball bearings

SUSPENSION (F/R)

Type Independent A-arm with upper
camber link
Damping Oil-filled, coil-overs

WHEELS

Dimensions (DxW)
—Front 2.2x.875 in.
—Rear Pro-Line 2.2x1.375 in.
Pro-Trax 2x1.375 in.
Type (F/R) One-piece molded

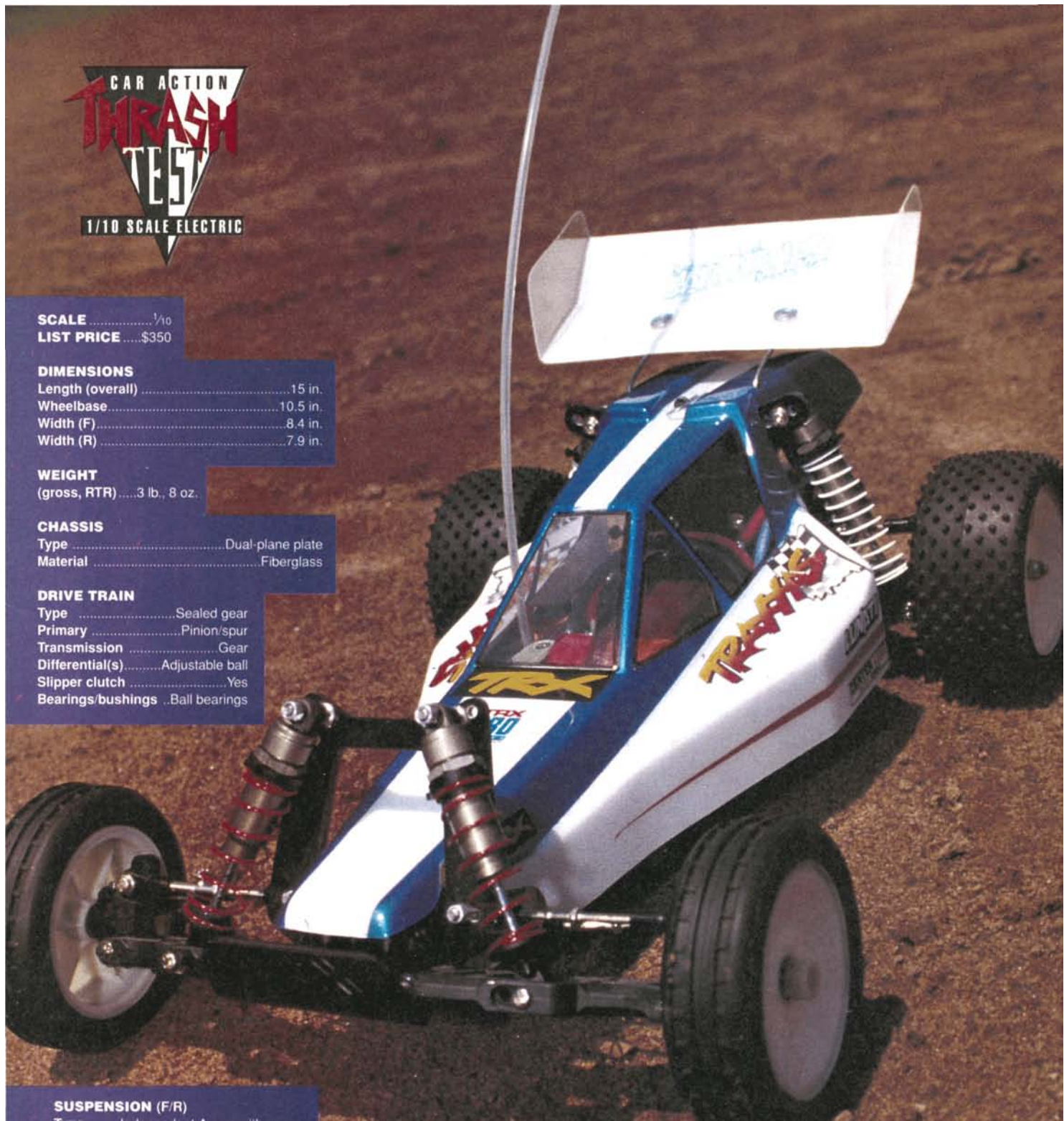
TIRES

Front Pro-Line XTR and Pro-Trax 4740
Rear Pro-Line Flat Stubbie
XTRs and Pro-Trax 4750

ELECTRICS

Motor, battery, ESC Not included

All-in-one Track Tamer



Traxxas TCP

by Wendy Matsuda

HAVE YOU EVER wanted a car that could perform equally well on all sorts of tracks—wide, narrow, indoor and outdoor? Have I got news for you! Traxxas* has come up with a "Total Competition Package" for the R/C fanatic in all of us. It's called a TCP, and it's basically a souped-up version of the TRX-3. This buggy can adapt to all sorts of tracks, all sorts of drivers and all sorts of punishment that you could possibly dish out. Traxxas has miraculously improved on a car that is already excellent by any standard. They packaged all the upgrades that a racer could want in one complete kit. The TCP should be dubbed the R/C equivalent of the Swiss Army knife.

FEATURES

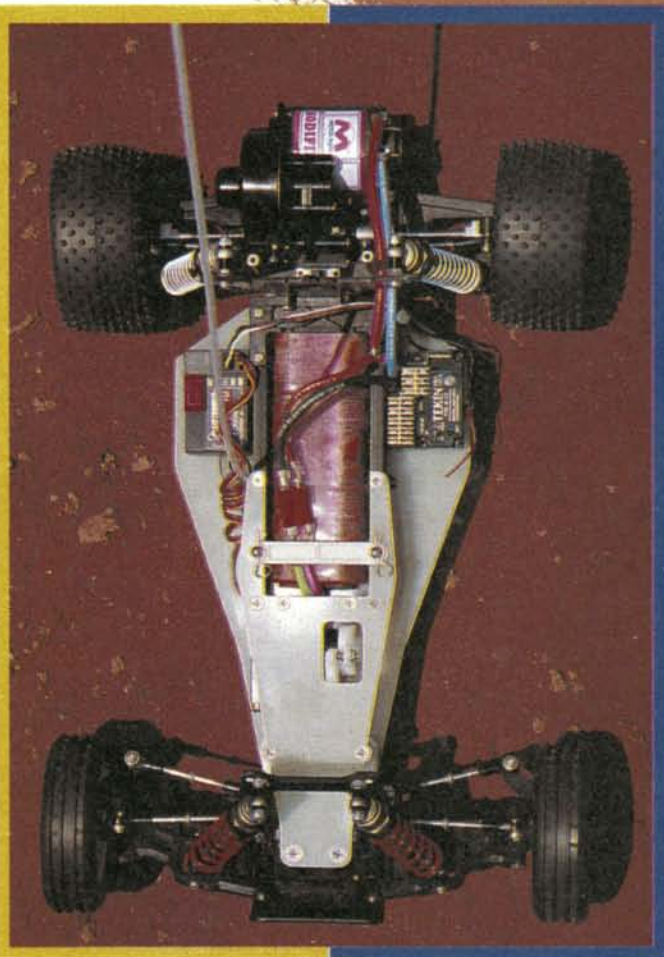
This kit is jam-packed with so many features that I don't know where to start. I guess the unique assembly manual first caught my eye. Not only did it have the usual pictures and words, but it also had exploded views of every assembly step. It is very useful to look at when you clean and maintain the car.

The TCP has the same double-decker, zero-flex, fiberglass chassis as the TRX-3. It's surprisingly strong and super-rigid. Both of the shock towers are made of black fiberglass. They have many holes for shock placement, and the rear bulkhead has even more holes for camber adjustment. The bridged front shock tower is very strong and capable of withstanding many crash landings. (Trust me, I know.) As with every top-of-the-line racing buggy, the TCP is equipped with a ball diff, including carbide balls; this one can be adjusted externally using a hex wrench.

Among other features, the kit includes two pairs of black nylon composite front arms—one long, one short. There are also two pairs of steering spindles; the white ones are meant for use on narrow tracks with tight turns. You can even use spacers to adjust the axis height for better clearance, or to compensate for larger tires.

Speaking of tires, the kit includes not one set, but two complete sets of tires and rims. One set consists of a pair of front and rear Pro-Trax tires and rims. The other set is a softer pair of front and rear Pro-Line Flat Stubbie XTR tires (PRO-86). To make the tires spin faster with less friction, the TCP has full ball bearings. The only things that don't have bearings are the bellcranks.

Because the TCP is a full-bore racecar, assembling it is somewhat complex. A beginner should get help from a knowledgeable friend or a hobby shop. I found an error in the assembly manual and also found that some of the screws had been mislabeled, so be sure to measure the screws in every bag before you use them. Also, before you begin assembly, make sure that the two bags labeled "Hardware" are not identical. One bag should contain all the screws, nuts and washers. The other should contain nylon tie-rod ends, turnbuckles galore and suspension pins. My kit had a duplicate bag of hardware included by mistake, so I called Traxxas and told them that I was missing the bag of screws, but that I had an extra bag of turnbuckles. They apologized for the error and sent the missing bag to me in four working days! Now this company is truly devoted to customer satisfaction!



SOME WORDS TO THE WISE

• **Step A-4: the diff-shaft assembly.** Ignore the photo and follow the drawing. Although Traxxas said it probably wouldn't make any difference, the correct procedure is to first slide the thrust bearing with the smaller inside diameter onto the diff shaft, followed by the thrust bearing, and finally, the thrust washer with the larger inside diameter.

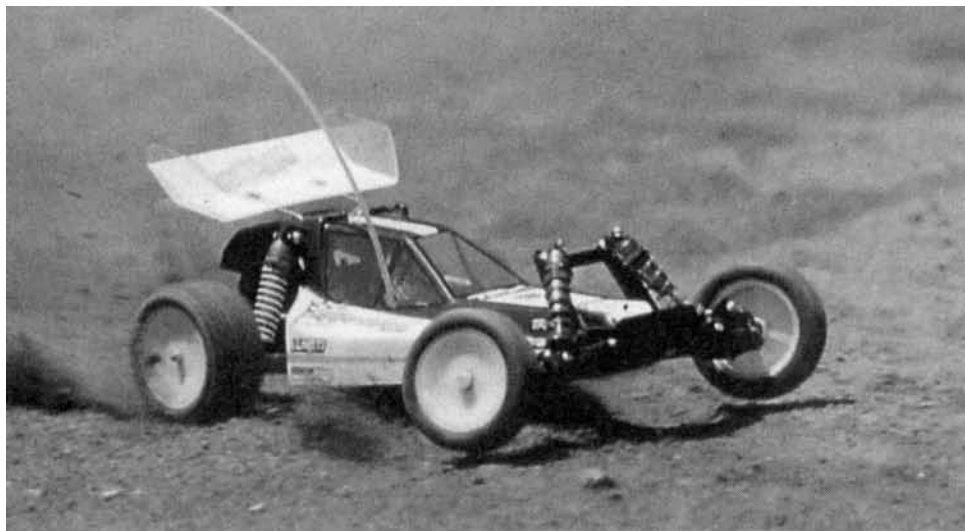
• **Step B-2.** Some of the bearings have to be forced into the holes in the gear-box; be careful not to damage them.

• **Step B-13: building the slipper.** When filing the hex points off the slipper shaft, don't file off too much or the spur gear might bounce around on the slipper shaft. Check and re-check the fit of the Teflon™ bushing until it just slides on.

• **Step C-6: installing the telescopic half shafts in the drive yokes.** This is probably the most frustrating part of building the TCP. The U-joint balls are very

slippery and hard to install in the drive yokes. What's worse is that the drive yokes aren't as flexible as the half shafts, so if you use too much strength to force the U-joints in, you're liable to break the yokes. That's why I strongly suggest that you get the hardened-steel drive yokes with the ball installed. Even if they cost around \$20, they're worth it in the long run, because they're stronger, and they're easier to remove, and that translates into easy tranny maintenance.

• **Steps F-17 and F-18: attaching the upper chassis plate to the battery box sides and bulkhead.** Don't screw the chassis to the bulkhead until all the holes in the chassis plate are aligned as closely as possible with their respective holes in the battery box and pivot bushings. I fastened the chassis plate to the pivot bushings first, because the holes in the bushings were already threaded. After that, install all of the other screws, and tighten them securely.



The TCP also has typical Traxxas telescopic drive shafts, which prevent dog-bone-popping accidents. But if you must have dogbones, the hop-up parts are included. These dogbones are tough and are connected on all sides, so you'll never have to

n't kidding when it named this buggy the TCP for "Total Competition Package."

TEST GEAR

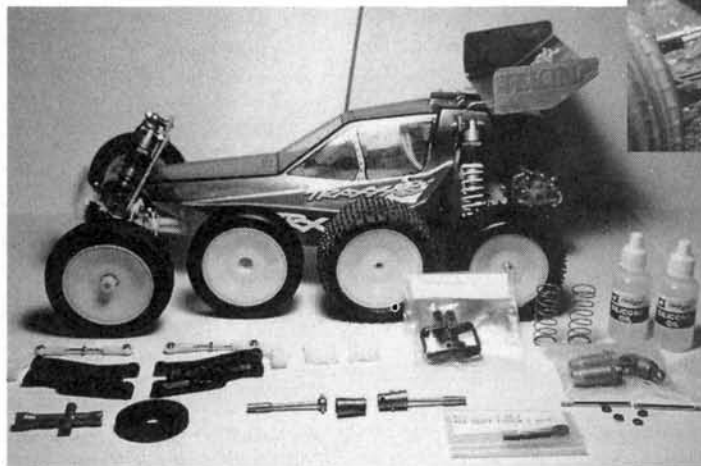
It took me quite a while to decide which equipment to use with the TCP. Because it

Whenever the car landed after one of its short flights, the shocks absorbed the impact as if it had jumped only inches instead of 3 feet or higher, and they never allowed the chassis to slap the ground—simply astounding!

worry about losing one. The only problem with installing them is that you'll have to limit the rear-suspension travel slightly with the spacers provided. Traxxas recommends the dogbones for fast tracks with small jumps.

Finally, in addition to the usual one pair of front and one pair of rear shocks, Traxxas includes an extra front pair. All the shock cylinders are made of hard-anodized T-6 aluminum and are Teflon™-coated. The front shocks come in two sizes: medium length (to be used with the short front arms to reduce chassis roll during turning) and standard long. The extra-long pair of shocks is for the rear. Traxxas also includes two bottles of silicone shock oil. Traxxas was-

is a full-bore racecar, I wanted to get a forward-only ESC; but then again, I also wanted to have reverse, because I tend to drive on the street (when there's no traffic), in my small backyard, in the hallways in

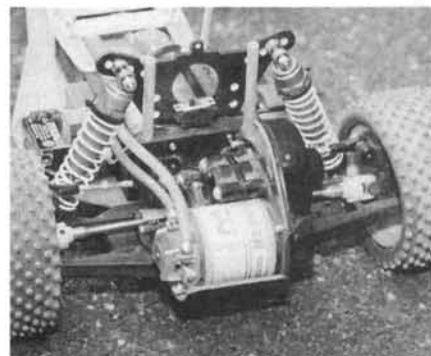


Above: the front end of the TCP can be equipped with long arms for more stability or short arms for better steering. To help reduce chassis roll during cornering, use longer front shocks (included) with the shorter front arms. Left: here's what you get when you buy the Traxxas TCP: a few wheels and tires, drive shafts and other miscellaneous tuning items.

factory options

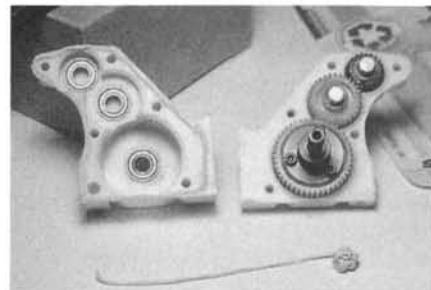
- Graphite front shock tower—part no. 2626X (\$12).
- 30-degree race-series caster blocks—2632R (\$4.50).
- 25-degree race-series caster blocks—2634R (\$4.50).
- Bellcrank ball bearings (5x8x2.5mm)—2728 (\$12).
- Graphite kit (includes graphite lower chassis plate, graphite front and rear shock towers and lightweight black fiberglass upper chassis plate)—2625 (\$95).
- Lightweight black fiberglass upper chassis plate—2628X (\$15).
- Graphite lower chassis plate—2629X (\$60).
- Hardened-steel drive yokes with U-joints installed—4628X (\$19.50).
- Hard-carbide diff balls—2723X (\$10).

Right: out back, you'll find a pair of hard-anodized T-6, Teflon™-coated aluminum shocks. Included in the TCP kit are a pair of slider shafts and a set of universals.

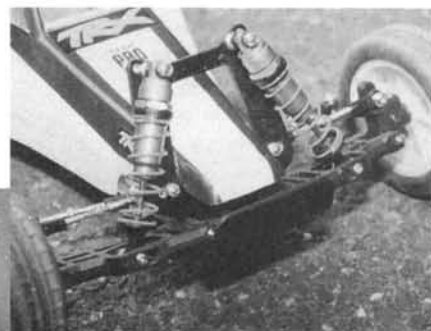


THINGS YOU'LL NEED

- Battery pack(s)
- Paint for Lexan body
- Transmitter, receiver and servo
 - Pinion gear
 - Servo-saver
 - Motor
 - ESC
- Small metal file



The TCP comes with a three-gear transmission, which features an externally adjustable ball diff.



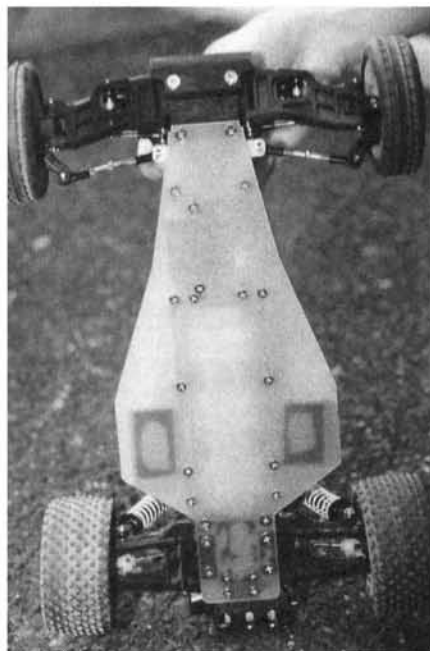
my apartment, down open storm drains and the like. So I compromised with the Tekin* 610-G—a top-of-the-line reversible ESC with GoldFET transistors, which make it amazingly race-worthy. It has a resistance of 0.00186 ohm, and its high frequency helps it recharge itself for longer run times, more power and a longer motor life. The best feature on this ESC is that reverse can be dialed out. Most tracks don't allow cars with reversible ESCs to race.

I prefer the dual-stick-type transmitter to the pistol-grip style. Not only is it easier to punch in the reverse, but I also feel that I have more control with a stick-type radio. Call me a dinosaur if you like, but Masami also uses a stick radio, so I'm not alone. I chose the Futaba* 2NBR (Attack-R), which includes the standard FP-R112JE receiver and two FP-S148 servos. It has all the same extras as a pistol radio of equal price (such as servo-reversing and trim adjustments).

The next step was to get a good motor. I already had a Trinity* Speedworks Ruby 16-turn triple in my Bolink Digger, so I decided to save some bucks and conduct a motor transplant. The Ruby was way too fast for the little Digger anyway.

Other items that I needed included a Deans* Ultra Plug, a Motor Man* servo-saver, a battery plug from Family Hobby (the Tekin 610-G doesn't come with a battery plug or motor connectors) and a Robinson Racing* 1021 48P 21T pinion.

I had to get only one hop-up item—the 4628X Traxxas hardened-steel drive yokes with the U-joints installed. I highly recommend this upgrade. It makes tranny maintenance a breeze rather than a struggle.



The main chassis is a fiberglass plate. An upper fiberglass stiffener makes it very rigid.

I think the idea is to clear all three with one jump (gulp!).

I decided to test the TCP's no-breakage guarantee by just letting it rip. The car performed wonderfully, even under the most adverse conditions, such as with a crazy driver behind the transmitter. At the beginning of the test, I went through the 90-degree turns at full throttle, and the car understeered and glided off the track and landed feet first in the tall weeds. Surprisingly, there was no damage. I would have to try harder. I managed to flip the car several times when I landed crooked off a jump; still no damage other than a

Likes

- Extremely durable car with strong, good quality parts.
- No-breakage guarantee.
- Lots of optional upgrades included in the kit.
- Convenient exploded views in the assembly manual make run in a snap.
- In the last few pages of the assembly manual, Traxxas gives lots of advice on alternate setups and upgrades for the TCP.

Dislikes

- Some parts fit too tightly.
- Telescopic drive-shaft U-joints are extremely difficult to attach to the nylon drive yokes included in the kit.

potential. It handled as if a pro were driving. At reasonable speeds, the TCP did not understeer in its turns; it was very responsive. The bellcrank steering kept the front wheels pointed in the proper direction. Even in a lumpy backyard full of surface tree roots, there was no bump-steer. The long front arms combined with the long front shocks made the TCP very stable and road-worthy. Its tires only left the ground when it jumped, soaring as effortlessly as the F-117A Stealth it resembles. All of the shocks worked perfectly. Whenever the car landed after one of its short flights, the shocks absorbed the impact as if it had

THE COMPETITION	TAMIYA DYNA STORM					
	Wheelbase	10.1 in.	10.625 in.	10.5 in.	10.5 in.	10.5 in.
	Width	9.625 in.	9.625 in. (f)/9.875 in. (r)	9.625 in.	9.625 in.	9.3 in.
	Weight	3 lb., 9.91 oz.	3 lb., 8.5 oz.	3 lb., 10 oz.	3 lb., 8 oz.	3 lb., 8.53 oz.
	Diff type	Adj. ball	Racing ball	Adj. ball	Adj. ball	Adj. ball
	Chassis	Dual-plane plate	Modular 3-piece	Stamped tub	Dual-plane plate	Molded 2-piece
	List price	\$452	\$339.95	\$337	\$300	\$249.99
	Available at*	\$244.99	\$176.99	\$167.99	\$179.99	\$109.99
	Reviewed in	2/95	2/94	10/94	10/95	7/95

*Prices may vary with location.

PERFORMANCE

Because Traxxas boasts that the TCP is a car for all tracks, I decided to "Thrash Test" it at two sites. My first site was the large outdoor track in Livermore, CA. This track is mainly used by 1/8-scale gassers, so it is wide, super-long and extremely rough. It doesn't have tabletops, whoops or a rhythm section, but it does have areas for monstrous jumps. In one part of the track, there are three jumps spaced about 11 feet apart.

scratched wing. There were times when I landed upside-down—still no damage; not even a small crack in the shock towers that I used as landing gear. After I had completely depleted one battery pack, I was convinced that the TCP was indestructible. I guess the no-breakage guarantee will remain a mystery. The next step was to drive it seriously and test its true performance.

When I stopped driving like a maniac, this buggy showed its trophy-winning

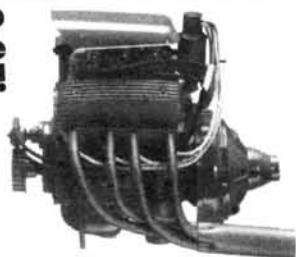
jumped only inches instead of 3 feet or higher, and they never allowed the chassis to slap the ground—simply astounding! The TCP even took a few jumps in reverse without problems.

My next stop was the Hobby Warehouse of Sacramento, which has a tight indoor track with many sharp turns and numerous obstacles to conquer. The track consists of one large tabletop jump, a rhythm section, a group of several small jumps (resembling

The Classic

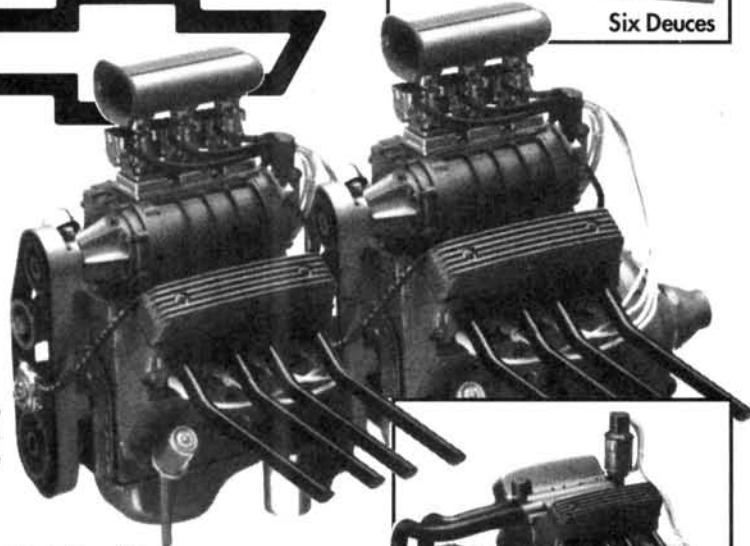


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TRAXXAS TCP

steps) and two large jumps. Again, I drove like a maniac for one whole battery pack. I careened into the guardrails, and I flipped the TCP a couple of times off the jumps, but I couldn't break anything—not even a lousy turnbuckle. Talk about a tough car!

Then I got serious and drove the car carefully. With the TCP in its original stock configuration, I had to slow down considerably to make the 30-degree turns; if I didn't, the car would understeer and plow into the track-divider pipes. Part of my problem was improper tires. Though the Pro-Line Stubbie XTRs worked very well on the Livermore dirt tracks, they didn't do as well on this particular track. Losi's super-soft silver-compound mini-pin tires were the hot tires on this track. After I had mounted them on the rims, the car was much easier to control, but I still had to slow down for the turns. That's when I decided to install the optional short front arms and see whether they would make any difference.

The shorter front arms made the steering action faster and sharper. I could take the turns much faster, but the tradeoff was stability over jumps and rough sections of the track. I flipped the car twice coming off a jump unevenly. The longer front arms are definitely more forgiving. Traxxas was right when it recommended the shorter arm setup only for experienced drivers. Stability is much more important to me than tighter, quicker turning, so I returned to the original setup. Besides, it takes more time for a turn marshal to put a car right-side up than it takes to negotiate sharp turns cautiously and safely.

Other than a tire popping off the rim, I had no problems with this car for the rest of the day.

Looking back at the whole experience (including problems with tight-fitting parts and bags of duplicate hardware), I would still do it all over again, because this buggy is a pure cream puff, and it's well worth the effort. It's easy to clean and maintain, and it handles well and is virtually unbreakable. (If you do manage to break something, Traxxas has a no-breakage guarantee that covers all nylon composite suspension parts.)

The TCP's only flaw is that there aren't many aftermarket parts—at least, not yet. On the plus side, Traxxas offers a ton of hop-up parts ranging from a graphite chassis set to a Hydra Drive adapter (direct from the factory). If your local shop doesn't have the part you need, Traxxas will sell it to you via mail order, and believe me, they won't leave you hangin'. They deliver *fast*.

* Addresses are listed alphabetically in the Index of Manufacturers on page 160.

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THIRD ANNUAL

MOTOR MAN

CHALLENGE

by GEORGE GONZALEZ

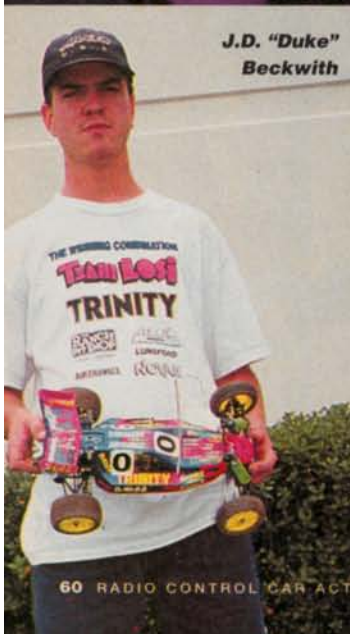
PHOTOS BY GEORGE GONZALEZ



Some racers pitted out in the rain and had to make a mad dash to the track.



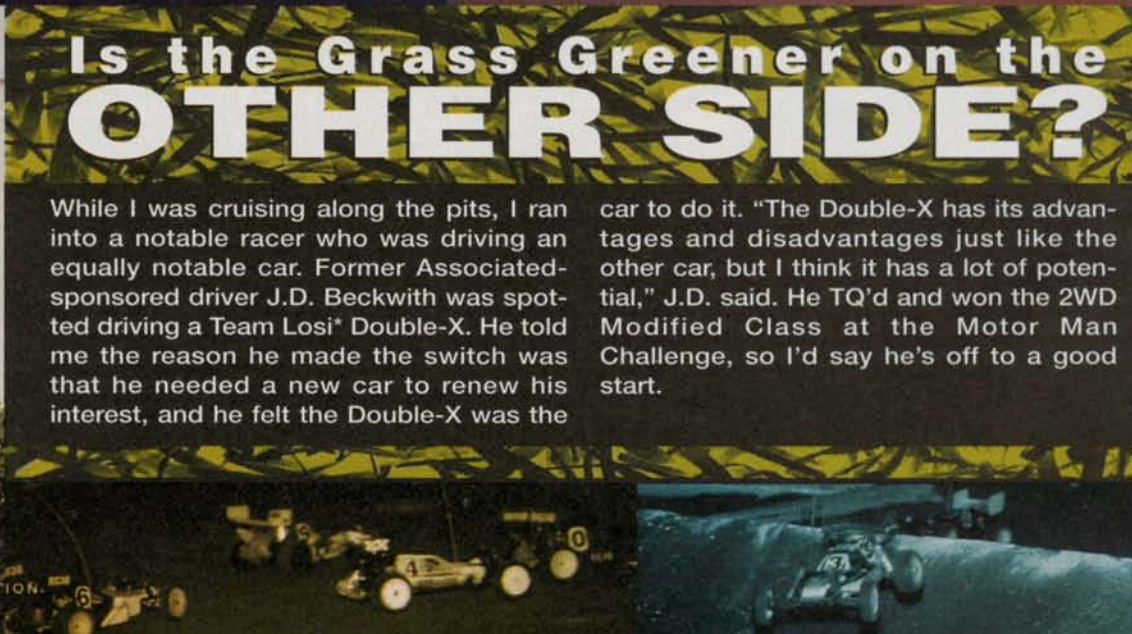
J.D. "Duke"
Beckwith



Is the Grass Greener on the OTHER SIDE?

While I was cruising along the pits, I ran into a notable racer who was driving an equally notable car. Former Associated-sponsored driver J.D. Beckwith was spotted driving a Team Losi* Double-X. He told me the reason he made the switch was that he needed a new car to renew his interest, and he felt the Double-X was the

car to do it. "The Double-X has its advantages and disadvantages just like the other car, but I think it has a lot of potential," J.D. said. He TQ'd and won the 2WD Modified Class at the Motor Man Challenge, so I'd say he's off to a good start.



Rainy Day Racin'!



HEAVY THUNDER SHOWERS and blistering winds didn't stop more than 200 diehard racers from attending the Third Annual Motor Man Challenge at Hobby Warehouse* in Sacramento, CA. The large facility was so packed with racers that many of them had to pit out of their cars or tents; the lucky ones had warm campers and motor homes. Some even built seaworthy dwellings that almost floated away in the current. The genuinely crummy weather didn't stop the racers from having a good time, and it turned out to be quite an adventure for most of them. Although the Motor Man Challenge wasn't a sanctioned racing event and there weren't many factory drivers competing, the action was just as hot as any ROAR and NORRCA event I've ever attended. There were five racing classes: Stock Buggy, Stock Truck, Modified Buggy, Modified Truck and 4WD Open. Four rounds of qualifying were scheduled in each class, and the winners were determined in a single Main.



Larry Hansen (left) and Parviz Soulati ended up showing the crowd that you don't have to be the fastest racers to win, just consistent.

TORTOISE beats HARE!

There's always something fun and different at each Motor Man Challenge. This year, a special racing class was introduced, which ended up to be the funniest racing class for the racers and the spectators. The Top Ten Slowest Class featured the 10 slowest racers at the event who competed in a 4-minute Main without turn marshals (that's right—the slowest racers and no turn marshals). Some great prizes were up for grabs, and all the drivers had to do was finish the race. One by one, the trucks ended up stuck on a washboard or rolled over onto their lids. At the end of the race, only two trucks were still rolling. Parviz Soulati crossed the line first and took home a Cobra* motor lathe for his efforts. Larry Hansen was the only other racer to cross the line, and he took home a Tekin* speed control for his ultra-cautious driving style. Way to go guys!



WINNERS' CH

2WD STOCK

FIN	QUAL	NAME	CHASSIS	MOTOR	BATTERY	ESC	RADIO	BODY	TIRES
1	1	Rob Thorpe	Losi	Handout	Sanyo	Tekin	KO	Losi	Losi
2	2	Tom Leman	Losi	Sonic	Reedy	Novak	Airtronics	Losi	Losi
3	4	John Scott	Assoc.	Peak	Orion	Tekin	Airtronics	RCPS	Losi/Pro-Line
4	10	Dustin Tobin	Losi	Handout	Motor Man	Tekin	Airtronics	Losi	Losi
5	6	Rob Moots	Losi	Handout	Orion	Tekin	Airtronics	Losi	Losi
6	5	James Arluck	Losi	Handout	Double Strike	Novak	Airtronics	Losi	Losi
7	8	David Goss	Losi	Handout	Double Strike	Tekin	Airtronics	Losi	Losi
8	9	Ron Bickel	Losi	Motor Man	Trinity	Tekin	Airtronics	Losi	Losi
9	7	Rick Vehlow	Losi	Peak	Orion	Novak	Airtronics	Losi	Losi
10	3	Jack Ingberg	Assoc.	n/a	Double Strike	Novak	Airtronics	RCPS	Losi/Pro-Line

2WD MOD

FIN	QUAL	NAME	CHASSIS	MOTOR	BATTERY	ESC	RADIO	BODY	TIRES
1	1	J.D. Beckwith	Losi	Trinity	Trinity	Novak	Airtronics	Losi	Losi
2	6	Jimmy Jacobson	Assoc.	Reedy	Reedy	Novak	KO	RCPS	Pro-Line
3	2	John Scott	Assoc.	Peak	Orion	Tekin	Airtronics	RCPS	Losi/Pro-Line
4	3	Rick Vehlow	Losi	Peak	Orion	Novak	Airtronics	Losi	Losi
5	4	Greg Dennett	Assoc.	Reedy	Reedy	Tekin	Airtronics	RCPS	Pro-Line
6	7	David Goss	Losi	Peak	Double Strike	Tekin	Airtronics	Losi	Losi
7	5	Jason Moberly	Losi	Reedy	Trinity	Novak	Airtronics	Losi	Losi
8	8	Ethan Erchinger	Losi	Peak	Orion	Tekin	Airtronics	Losi	Losi
9	9	Rob Thorpe	Losi	Peak	Sanyo	Tekin	KO	Losi	Losi
10	10	Jack Inberg	Assoc.	Reedy	Double Strike	Novak	Airtronics	RCPS	Losi/Pro-Line

4WD MOD

FIN	QUAL	NAME	CHASSIS	MOTOR	BATTERY	ESC	RADIO	BODY	TIRES
1	1	Jeff Wittman	Yokomo	Matrix	Double Strike	Tekin	Airtronics	Yokomo	Pro-Line
2	4	James Arluck	Yokomo	Trinity	Double Strike	Novak	Airtronics	Yokomo	Losi
3	5	Shawn Nibelink	Yokomo	Reedy	Reedy	Tekin	Airtronics	Yokomo	Pro-Line
4	2	Bryce Beaver	Yokomo	Reedy	Reedy	Tekin	Airtronics	Yokomo	Pro-Line
5	3	Bryan Kinney	Schumacher	Reedy	Reedy	Tekin	Airtronics	Schumacher	Pro-Line
6	6	David Miller	Kyosho	Reedy	Double Strike	Novak	Airtronics	Kyosho	Pro-Line
7	9	Keith Hyatt	Schumacher	Trinity	ESP	Tekin	KO	n/a	Kyosho/Losi
8	7	Wade Eldredge	Schumacher	Reedy	Trinity	Novak	Airtronics	Schumacher	Pro-Line
9	8	George Johnson	Schumacher	Trinity	ESP	Tekin	JR	Schumacher	Kyosho/Losi
DNS		Greg Dennett							

PRO STOCK TRUCK

FIN	QUAL	NAME	CHASSIS	MOTOR	BATTERY	ESC	RADIO	BODY	TIRES
1	2	Bob Russell	Assoc.	Handout	Double Strike	Tekin	Airtronics	Dahm's	Pro-Line/Losi
2	6	David Goss	Assoc.	Handout	Double Strike	Tekin	KO	Assoc.	Pro-Line
3	9	Ned Bowen	Assoc.	Handout	ESP	Novak	Airtronics	Assoc.	Pro-Line
4	8	Gary DeLeon	Losi	Handout	Motor Man	Tekin	Futaba	Losi	Losi
5	5	John Neary	Losi	Handout	Reedy	Tekin	Airtronics	Losi	Losi
6	1	Shawn Dassonville	Assoc.	Handout	Reedy	Novak	Airtronics	Assoc.	Pro-Line
7	3	Brian Dent	Losi	Handout	Double Strike	Novak	Airtronics	Losi	Pro-Line
8	7	Richard Slejmar	Losi	Handout	Perfect Match	Novak	Futaba	Losi	Losi
9	10	Brian Flemmer	Losi	Handout	Motor Man	Tekin	Futaba	Losi	Losi
10	4	Ben Aromin	Losi	Handout	Double Strike	Novak	Airtronics	Losi	Losi

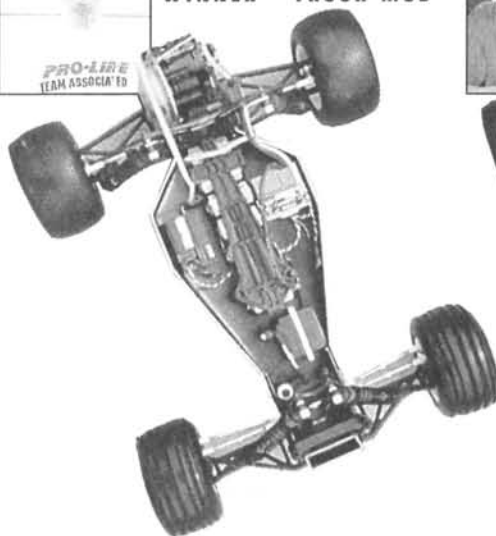
TRUCK MOD

FIN	QUAL	NAME	CHASSIS	MOTOR	BATTERY	ESC	RADIO	BODY	TIRES
1	1	Jimmy Jacobson	Assoc.	Reedy	Reedy	Novak	KO	Assoc.	Pro-Line
2	2	Greg Dennett	Assoc.	Reedy	Reedy	Tekin	Airtronics	Assoc.	Pro-Line
3	3	Jeff Lewis	Assoc.	Reedy	Reedy	Tekin	Airtronics	Assoc.	Pro-Line
4	4	J.D. Beckwith	Losi	Trinity	Trinity	Novak	Airtronics	Losi	Losi
5	6	Bryce Beaver	Assoc.	Reedy	Reedy	Tekin	Airtronics	Assoc.	Pro-Line
6	8	Jason Moberly	Losi	Peak	Motor Man	Novak	Airtronics	Losi	Losi
7	5	Ethan Erchinger	Losi	Peak	Orion	Tekin	Airtronics	Losi	Losi
8	10	Joel Bunce	Losi	Motor Man	Motor Man	Tekin	Airtronics	Losi	Pro-Line/Losi
9	7	John Orr	Assoc.	Reedy	Reedy	Novak	KO	Assoc.	Pro-Line
10	9	Bob Russell	Assoc.	Reedy	Double Strike	Tekin	Airtronics	Dahm's	Pro-Line/Losi

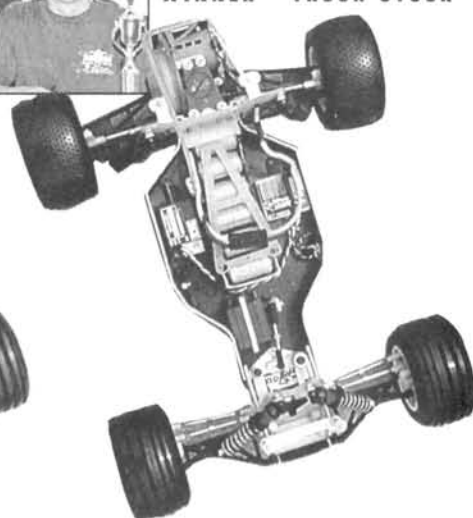
A R T



JIMMY JACOBSON
WINNER—TRUCK MOD



BOB RUSSELL
WINNER—TRUCK STOCK



QUALIFYING

Less than 1 second decided the top qualifying position in the 2WD Stock Class. Rob Thorpe took the TQ honors after doing battle with Tom Leman and Jack Ingberg for four grueling rounds of qualifying. In the 2WD Modified Class, J.D. Beckwith creamed his competitors as the only driver in his class to pull 13 laps. Shawn Dassonville took the TQ honors by a narrow margin in the Stock Truck Class by posting a 12/4:18.79 best time. In the Modified Truck Class, Jimmy Jacobson had his RC10T2 dialed, and he took the TQ position by storm. Jeff Wittman's Yokomo* led the way in the 4WD Open Class with a 13/4:14.97 to take the TQ honors and post the fastest time at the event.

A-MAIN ACTION

2WD Stock. Top qualifier Rob Thorpe managed to avoid a giant pileup in the first corner and bolted into the lead. Meanwhile, Jack Ingberg and Tom Leman followed closely behind. At around the 3-minute mark, a major scrimmage going through the triples put Leman in the lead, while Thorpe fell way back to fifth position. Unfortunately, Ingberg's car didn't



Pitting inside was the hot setup.

survive the crash and was out of the race completely. With less than 1 minute left in the race, Thorpe managed to work his way back to the second position and was knocking on the leader's back door. As the clock counted down the few remaining seconds, Leman rolled his buggy over going around a corner and Thorpe squeezed in for the win. Leman ended up finishing second, while John Scott took third.

Stock Truck. Top-qualifier Shawn Dassonville had the lead for about half a lap, but he was run over by Brian Dent, David Goss and Bob Russell going through the tabletop jumps. So many crashes occurred in this race that it was almost impossible to predict the outcome. At the 3-minute mark, Goss and Russell battled it out for first and second, while Gary

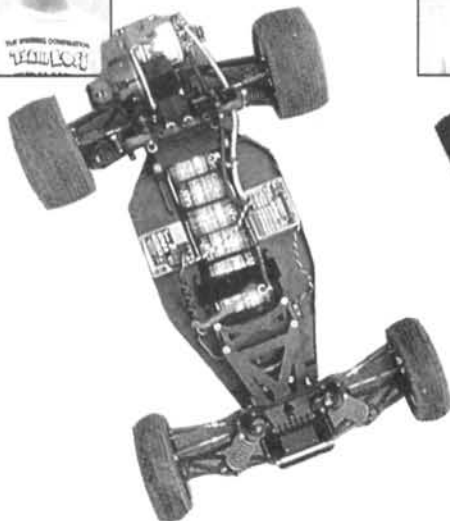


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ESP	Protoform	Upscale
ETA	Puretech	Vantage
Excel	Pyramid	Victor
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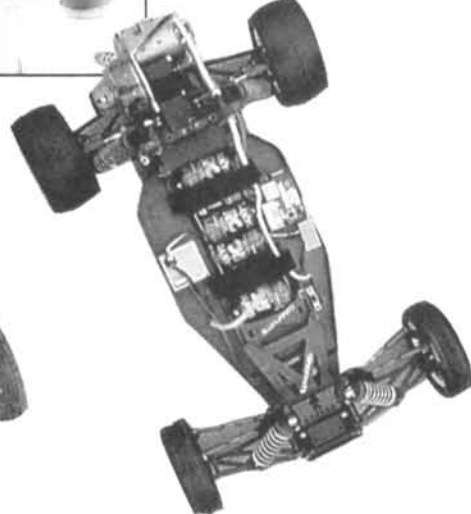
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**J.D. BECKWITH**
WINNER—2WD MOD

DeLeon and Ned Bowen fought for third. At the sound of the buzzer, it was Russell who crossed the line first with an 11/4:04.17. Goss finished second with a 11/4:07.28. Rounding up third was Bowen with an 11/4:11.18. Dassonville wasn't able to make a comeback, and he had to settle for sixth place.

2WD Modified. Around turn one, top qualifier J.D. Beckwith was out in front with his Losi Double-X and said, "See ya." Following not-so-close behind were John Scott, Jason Moberly and Greg Dennett. At the 3-minute mark, Beckwith was still in front by a mile, and a battle for second was being waged by Scott and Jimmy Jacobson. At the sound of the buzzer, Beckwith finished with an easy win, while Jacobson squeezed in at the last corner to take second

**ROB THORPE**
WINNER—2WD STOCK

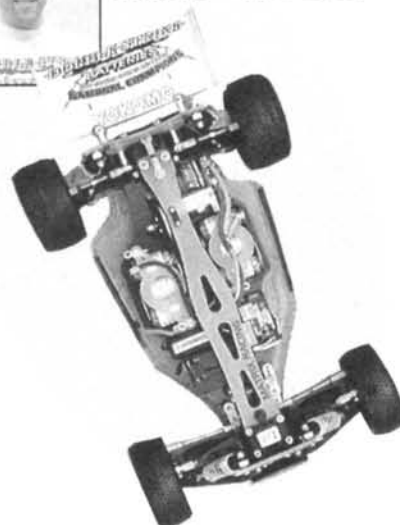
place. Scott had to settle for an honorable third-place finish.

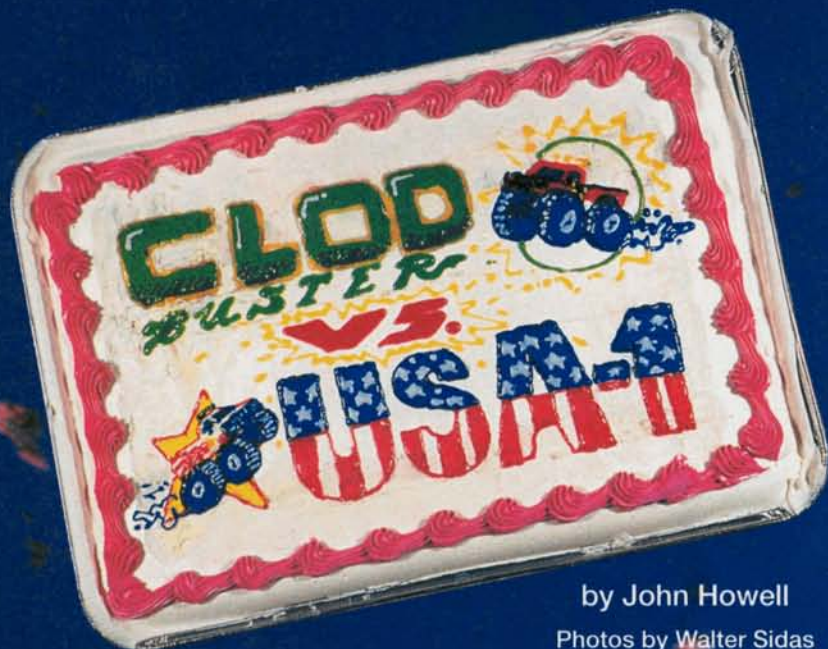
Modified Truck. After an exceptionally clean start, it was top qualifier Jimmy Jacobson who ended up in front. Jeff Lewis was a close second while Greg Dennett took the flanking position. At the 2-minute mark, Dennett swiped the second-place position away from Lewis and made his way toward the leader. Dennett challenged Jacobson right down to the wire, but Jacobson managed to keep his cool and finish with a 12/4:02.68 to take the win. Dennett posted a 12/4:03.27 to take second (talk about close). Lewis ended up with a 12/4:12.25 to take a respectable third place.

4WD Modified. After a rocky start, top qualifier Jeff Wittman led the way, while Bryce Beaver, James Arluck and Shawn Nibbelink formed a great wall behind him. Wittman's lead kept getting bigger and bigger, however, it was anyone's ball game for second and third. At the sound of the buzzer, Wittman crossed the line first to post a 12/4:05.29 and take home the first-place trophy. Arluck crossed second with a 12/4:13.35, while Nibbelink crossed third with a 12/4:14.45.

Despite the bad weather, the Third Annual Motor Man Challenge was a complete success. The folks at Hobby Warehouse did an awesome job of managing the event, and all the qualifying heats and Mains took place without a glitch. Even the slowest drivers were winners, and all the contestants went home with some nice prizes. I look forward to the next Motor Man Challenge; I only hope the weather cooperates!

*Addresses are listed alphabetically in the Index of Manufacturers on page 160.

**JEFF WHITMAN**
WINNER—4WD OPEN



by John Howell

Photos by Walter Sidas

THE KYOSHO* USA-1 and the Tamiya* Clod Buster are two of the biggest, baddest 1/10-scale monster trucks available. Both feature 4WD, 4WS and dual motors. They also come with huge tires that help them aggressively tear up just about anything in their paths.

The rivalry between these two terrors has been going on for years, and we're here to once again heat up the "Which truck is better?" war. John Huber and I went out for a full day of "Thrash Testing," and we put both trucks through a gruelling set of tests to see which one would take the cake!



Who takes the cake?

Both trucks were tested in relatively stock form, with the exception of the added Novak* Hammer Pro ESCs and hotter Trinity* Green Machine 2 and reverse-rotation Green Machine 2 stock motors. Trinity* Zip packs powered both vehicles; a JR* NER-4735 servo turned the tires on the Clod while a Hitec* 605 servo handled the steering chores on the USA-1.

Now that you know a little more about the two competitors, let's see how they fared out on the battlefield.

FEATURES	CLOD BUSTER	USA-1
Clear, polycarbonate body shell	—	●
Injection-molded body shell	●	—
Plastic-tub chassis	●	●
4W independent suspension	—	●
Solid-axle suspension	●	—
Plastic bushings	●	—
Metal bushings	—	●



CLOD BUSTER VERSUS



SUSPENSION TRAVEL

We first measured the trucks' suspension travel. We lifted up the front driver's-side wheel and measured how high it got off the ground before the rear driver's-side wheel started to lift up as well.

Clod Buster—3.5 in.

USA-1—4.5 in.

As you can see, the USA-1 has a pretty good edge in the suspension department.

But would its additional suspension travel make it handle better in the rough than the Clod? Further testing would reveal the truth....

• Winner—USA-1

HANDLING

So, the USA-1 has a slight edge in suspension travel, but the Clod has a slightly longer wheelbase. Which truck would handle the rough stuff better? We tested the trucks at a nearby construction site that had varied terrain—soft sandy sections, small and medium hills and ledges and a



ton of 10- to 12-inch-high bumps/jumps.

John and I ran the trucks at the same time to compare them head to head as they went through the rough stuff. We both noticed that not much stopped the Clod Buster. It was very stable through most of the rough sections, and it jumped a little better, too. On landings, the Clod didn't seem to bounce as much as the USA-1; the USA-1 excelled on the small, 10- to 12-inch hills though. Its shorter wheelbase helped it to get up and over them, whereas the Clod Buster tended to high center on the small hills a bit. On steep, larger ledges, the Clod would wheel up the ledge and then tip over onto its back if the ledge was particularly steep. The USA-1 didn't do that too much; it would just break its tires loose and get stuck in the side of the ledge. Overall though, the Clod was more stable through the jumps and bumps than the USA-1, so we gave it the win in this category.

• Winner—Clod Buster

We ran the test on three surfaces...first up was dirt...When we nailed the throttle, we were sort of surprised. Both trucks pulled as hard as they could, but neither gave an inch.



TUG OF WAR

Next, we tested to see which truck would "out-muscle" the other. We ran the test on three surfaces—dirt, pavement and grass—three times on each.

First up was the dirt—a very dry, dusty, loose surface. We were curious to see whether one truck would have a distinct advantage. When we nailed the throttle, we were sort of surprised. Both trucks pulled as hard as they could, but neither gave an inch. They spewed up a ton of dirt, but after three attempts, we had our first tie.

Next, we moved to the pavement. On a more "high-grip" surface, the results were entirely different. When we nailed the throttle, the Clod Buster started to drag the USA-1 around as if it weighed nothing—literally no competition when they had traction.

After that, we hit the grass, and again, when the throttle was nailed, the Clod easily pulled the USA-1.

• Winner—Clod Buster

USA-1

TAMIYA CLOD BUSTER

SCALE 1/10
LIST PRICE \$354.95

DIMENSIONS

Length (overall) 18.75 in.
Width 14.875 in.
Wheelbase 10.75 in.
Track (F/R) 10.625 in.

WEIGHT (gross, RTR) 9 lb., 8 oz.

CHASSIS

Type Bathtub
Material ABS plastic

DRIVE TRAIN

Type/primary Pinion/gear
Transmission Gear
Differential(s) Bevel gear
Bearings/bushings Plastic bushings

SUSPENSION (F/R)

Type Rigid axle
Damping Twin coil-springs

WHEELS (F/R)

Type Plastic
Dimensions (DxW) 2 7/8x3 7/8 in.

TIRES (F/R) Terra

ELECTRICS

Motor Included
Battery Not included
Speed control Mechanical, rotary, 3-step

KYOSHO USA-1

SCALE 1/10
LIST PRICE \$319.95

DIMENSIONS

Length (overall) 18.3 in.
Width 15.7 in.
Wheelbase 10.4 in.
Track (F/R) 11.4 in.

WEIGHT (gross, RTR) 8.7 lb.

CHASSIS

Type Tub
Material Plastic

DRIVE TRAIN

Type/primary Pinion/gear
Transmission Gear
Differential(s) Gear
Bearings/bushings Bronze bushings

SUSPENSION (F/R)

Type Lower A-arm, upper control link
Damping Coil-over shocks

WHEELS (F/R)

Type One-piece, chrome-plated plastic
Dimensions (DxW) 4x2.9 in.

TIRES (F/R) Rubber, off-road

ELECTRICS

Motor Included
Battery Not included
Speed control Mechanical, 3-step, wiper unit

CENTER OF GRAVITY

To check this out, we placed both trucks on a plywood board and then tipped the board up until the one with the highest center of gravity tipped over. We slowly raised the board three times, and the Clod tipped over first every time.

• Winner—USA-1



HILL CLIMB

For this test, we ran both trucks on two hills.

• **Hill 1**—very soft dirt at roughly a 70-degree angle.

First up was the Clod. Roughly halfway up the hill, we drove a post into the soft dirt. We managed to get the Clod's front tires right to the post every time. During numerous tries, the best we could do was get the truck's front end right to the post. Having reached that point, the Clod's tires would start to spin, and it would slowly start to sink into the ultra-soft dirt.

After seeing the Clod's performance, we weren't expecting the USA-1 to do any better. After smoothing out the dirt a bit, we were ready to launch the USA-1. We pinned the throttle from the starting line and the truck launched up the hill about a foot past the post. Each time, the USA-1 managed to go slightly farther up the hill than the Clod.

• **Hill 2**—hard-packed dirt. For roughly 15 to 20 feet, this hill goes up at a 60-degree angle, and at the top, there's an almost vertical edge that we knew would be almost impossible to get over.

This time, we took the USA-1 up first. As we expected, it exploded up the hill with confidence and got right to the vertical part before it started to lose traction. Almost every time, we got it to the top, turned the beast around and drove right back down without a problem.

The Clod hadn't done as well as the USA-1 on hill 1, so our expectations weren't too high for it, but, man, were we surprised! The Clod managed to get to

exactly the same spot on the hill as the USA-1, but it wasn't as easy getting it there, and getting down was definitely more difficult. For some reason, the USA-1 drove straight up the hill while the Clod sort of "snaked" as it pitched from side to side. We had to countersteer quite a bit to get it to go straight. The Clod actually may have done better than the USA-1 on the hard-packed surface, but it lost momentum because of its side-to-side "swapping" tendencies.

As I said earlier, getting back down with the Clod was a chore sometimes. When it reached the top and we tried to turn it around, almost every time, it high centered on the side of the hill and came careening violently down end over end. But, to give it some credit: it rolled down the hill a million times, and *nothing broke*. The Clod is one tough customer.

The USA-1 got up the hills faster and went farther, and it also came down the hills more gracefully, but when it *did* stumble, we had a few problems. While attacking both hills, we managed to bust up the USA-1 a bit. It comes with ball ends and links that wouldn't be able to take serious abuse on a much smaller truck, let alone this beast! Each time we rolled the truck, the links popped off. Once, a piece of the steering assembly fell off after a crash, but I was able to fix it quite easily (good thing I had taken a few tools along). But despite this shortcoming, we decided to give the overall nod to the USA-1. It's the king of the hill.

• Winner—USA-1

CLOD BUSTER VERSUS USA-1



DRAW RACE

Once again, we hopped on over to a vacant parking lot to do a little drag racin'. We staged both trucks on the starting line, waited for the Christmas-tree lights to turn green and then nailed the throttles. Actually, there was no timing light system, but our "1, 2, 3...go!" method was accurate enough. When we nailed the throttle, the USA-1 consistently jumped off the line quickest and remained in the lead until the end of the race. It's definitely the faster of the two.

• Winner—USA-1

TURNING RADIUS

A parking lot was the perfect place to test turning radius. The Clod has a slightly longer wheelbase than the USA-1, so going into this test, we pretty much knew that the USA-1 would be the better of the two. And the winner is...well, no surprises here...

Clod Buster—5-foot turning radius
USA-1—3-foot turning radius

• Winner—USA-1



FULL-SPEED TURNING

Which one would handle better at full speed? Well, to tell you the truth, neither had an advantage here. If you turn either of these beasts at speed, both will tip over pretty easily—something we found out quickly for ourselves! Ouch!

• Tie



DURABILITY

While bashing the trucks around in pretty brutal fashion throughout our day of testing, we were constantly amazed—both at what they *could* handle and what they *couldn't*. They're both pretty tough, but it was the Clod Buster that constantly amazed us with its out-and-out beefiness. Many times, we rolled that puppy down hills, bashed it into rocks and ran it straight into cliffs. Nothing ever broke, and we never had to stop for repairs.

On the other hand, as I mentioned before, the USA-1 was sidelined a few times because its ball ends popped off and the one steering piece ripped out of the steering assembly. Knowing that piece popped out rather easily didn't give me confidence in it. If you get the USA-1, your first mod should be burlier ball ends, turnbuckles and rod ends.

With that in mind, we're gonna give the edge to the Clod.

• Winner—Clod Buster

While bashing the trucks around in pretty brutal fashion, we were constantly amazed—both at what they *could* handle and what they *couldn't*.

RUN TIME

After the drag race, we recharged our packs to see which one would run longer on a charge. We were surprised at the results.

Clod Buster—7:40 minutes
USA-1—5:48 minutes

As you can see, the Clod had almost 2 minutes more of run time.

• Winner—Clod Buster

SO WHICH ONE IS FOR YOU?

Well, that's a tough decision. We worked closely with both vehicles and we saw the good and bad points of each.

It's up to you to decide which one meets your needs. If you want a hill climber, go for the USA-1; if you want a truck that's more stable through the rough stuff, get the Clod...etc. The Clod excelled in several categories that are the most important for me, and that's why I personally prefer it. You may disagree, but here's why it's my choice:

1. It seems to be a bit tougher. After watching it cartwheel down massive hills without being damaged, I'm really impressed. It's beefy and should survive whatever you throw at it!

2. I felt that, in the rough stuff, it handled slightly better than the USA-1.

3. If I ever decide to hop up the truck, aftermarket parts are readily available.

Attention Clod and USA-1 Owners!

Which Mods Come First?

So you own a nice big truck. You're looking to try out a few of those hot new mods that you've been scoping out in the magazine. Hey, stop looking at my Project Big Truck like that, would you!? Just kidding!

Anyway, here are a few things you might want to do to your truck if you already haven't.

- **Ball bearings** are a must. Replace all those sloppy bushings, and you'll be surprised at how much more efficient your truck will be.
- **An ESC**—get one. Make sure it can handle two motors.
- **Hotter motors**—add a set. Check with Trinity and ESP Mfg.* for their selection of hot motors.
- **Oil-filled shocks.** Trinity makes a set for the Clod Buster, but you might also want to check with Team Losi*, Associated* and Traxxas* to see whether their shocks will fit.

Now, these are just the basic hop-ups—something to start with. After that, the sky's the limit: wild gearboxes, aluminum chassis, cantilever suspension systems, aluminum wheels.... The list of possibilities is endless.

If you're interested in hopping up your truck, you *have* to talk to two people:

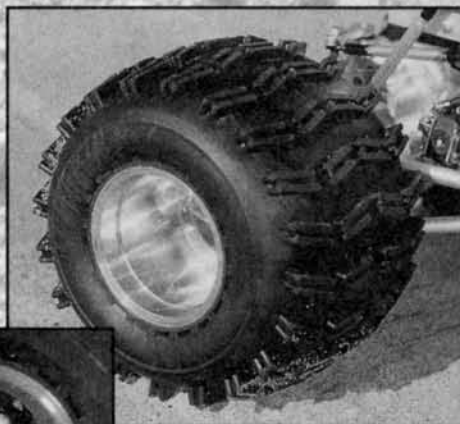
Eric Sutcliffe—ESP Mfg.: (815) 455-5440.

Larry Bennett—Bennett Equipment*: (317) 538-2725.

Both guys produce chassis and suspension kits for the Tamiya Clod, and both are extremely knowledgeable about monster trucks and will be able to point you in the right direction.



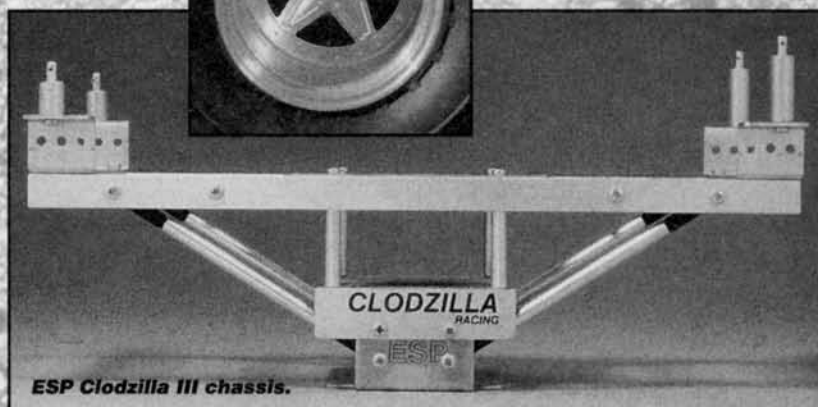
ESP's decked-out Clodzilla II.



Pro-Line's* monster truck tires.



JPS* aluminum Clod Buster wheels.



ESP Clodzilla III chassis.

Through no fault of Kyosho's, there aren't as many hop-up parts for the USA-1.

On the flip side of the coin: in my mind, the Clod beat the USA-1 by only the slightest margin. The USA-1 is a very good truck, too. Here are the reasons why you should consider it:

1. During our tests, it was faster out of the box. In a drag race, it definitely beat the Clod by a pretty good margin.
2. It's the king of hill climbing! It's more surefooted on hills than the Clod Buster, so

if you're a hill-climbing fool, look no further. Even though the Clod proved it's tough by not breaking every time it crashed down the hill, I still wouldn't want to subject it to that type of punishment every time I went up a hill. The USA-1 likes to turn and *drive* down the hill instead of tumble down.

3. Replace its ball ends and turnbuckles with beefier units, and the USA-1 is a very formidable opponent for the 'durable Clod. If not for the tie-rod problem, I might have

chosen the USA-1 as my favorite.

So there you have it. Hope you enjoyed our little bash fest! I'd like to take the opportunity to thank a few people for their help in getting this article ready: Sean Cilbrith, Sharol Szenes, Adam Tremlett, the good folks at Danbury Topsoil and Michael Bouse Bakeries for their *awesome* cake work.

*Addresses are listed alphabetically in the Index of Manufacturers on page 160.

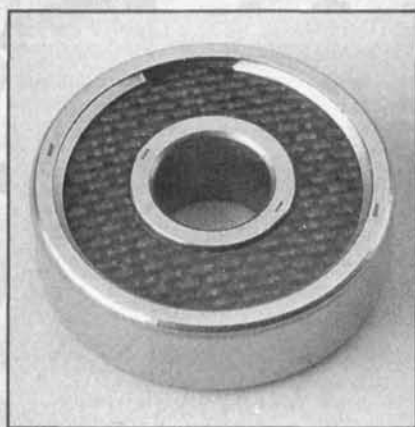


Bearing Basics

ASK ANY EXPERT what the single best modification you can make to an R/C car is, and the answer will be to add ball bearings. Many beginners think of bearings as some collection of magic parts that will instantly make them faster, and to an extent, they're right (except for the magic part)! Just what are those little rings of rolling steel, and why should we pay attention to how they're made and how well they perform?

Imagine you're walking across the kitchen floor one night. It's late, it's dark, and all you really want to do is grab a quick bite and head for bed. No problem, right? Until you kick the dog's food dish, and those hard little roundy dog-food things that he'll eat only when you aren't feeding him at the table spill all over the floor. One more step and *kabam!*, you're butt-first on the linoleum. That my friend, is how bearings work. The dog-food pieces that rolled between your foot and the floor essentially reduced the friction that enabled your foot to grip the floor, just like the balls in a bearing. Simple, eh?

Types of Bearing Seal

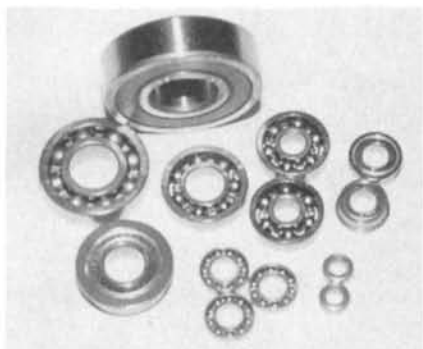


If you don't seal the bearing, get ready for intense maintenance and short bearing life. When the lubricant on the balls dries up or gets flung off, or when a little piece of dirt gets into the bearing and causes one of the balls to be interrupted in its mad dance around the race, it begins to skid. One ball slows the ball behind it, and the one behind that, and so forth, until there's a long, angry conga-line of bearing balls bumping into one another and causing a terrible mess.

Bearing seals have been made of many materials, but most seals today are made of thin steel, stainless steel, Teflon, rubber, or cork. The non-metal seals usually do a better job of conforming to the exact dimensions of the bearing race, and they do a great job of sealing the elements out. Because they grip the inner races more tightly, they also tend to be a little tighter than metal-sealed bearings. They seal so well that many of them need to be cleaned

only on the outside; therefore, they have to contain a grease-type lubricant that will last for the life of the bearing.

Some metal-sealed bearings, such as Boca Bearing Ultra Seals, rely on precision-manufacturing processes for a tight seal. They don't need lubrication that will last for the life of the bearing, but they also don't run as freely as less expensive metal-seal bearings. That's not necessarily a bad thing, unless you run your car or truck in a very clean environment that's really easy on the bearings, or are a real fanatic about free-running components. Indoor-oval guys are like that. When I ran indoor dirt oval cars several years ago, between heats, I actually used to take the bearing seals off with a tiny pointed tool, laboriously spray the bearings out, lubricate them with a very thin oil and re-seal them. It was a lot of work, but when one wheel spun, the entire drive train would spin, and spin, and spin...



In this photo, you can see the inner workings of a ball bearing. See all the steel balls inside the bearing? Those are what the bearing actually spins on.

BEARING BRIEFING: WHY BOTHER WITH BEARINGS?

Do we really need to use ball bearings? Think of an off-road front end with its wheels mounted on the front axle and retained by nuts on the end—standard stuff. Now imagine that the wheels are mounted directly on the axle without benefit of bushings or bearings. How long would it take for the center of the plastic wheel to be worn by the axle, get sloppy and flop around? Not too long, I'd wager. Convinced?

C'MON, WHAT'S A BEARING?

Working with the above example, line the hole in the wheel with a nylon or metal ring so that the ring wears against the axle. Things are better now, but not really good. Lubricate that metal-to-metal contact, and you'll start to get somewhere. If you use metals that decrease friction and wear, you're looking at the bushing/axle relationship on the front end of an entry-level R/C car.

Cut that bushing into two rings—an inner one and an outer one. Make sure there's enough space between the rings to insert a row of little balls—like the dog food between your foot and the floor. To prevent the balls from falling out, put some kind of side plates on the rings, and what you have is a bearing—somewhat crude, to be sure, but a bearing, nonetheless.

Bearings are properly referred to as ball-raced bearings. They consist of a row of little round balls made of a hard substance such as steel; the balls have been treated or plated so that they're hard, true and smooth. Even tiny imperfections seem large on a ball that's as small as those found in a miniature ball-raced bearing. These tiny balls run around a grooved track

in the race that keeps them lined up properly, so they'll provide minimal friction and maximum life. Like the balls, the races have to be made precisely; even a small wave can make the balls slow down and increase friction. That's a bad thing, because those little balls travel at incredible relative speeds. If there are 20 tiny balls in a bearing, each one has to rotate 20

times for every rotation of the bearing. That means that the actual speed of the balls within the race is 20 times that of the wheel or gear!

OK, BUT WILL THEY MAKE ME FASTER?

Why are bearings considered better than bushings? Put two cars side by side—both

Bearing Maintenance

Because you want to keep the nasty junk out of your bearings, maintenance is extremely important. Always start by removing the big chunks of dirt from the outside before you remove the bearing from its socket. If possible, use a bearing-removal tool; never use a screwdriver or an Allen wrench. A tool that's harder than the bearing can bend it out of round or dent the seals, and that will cause unwanted drag. I use an Associated tool that's

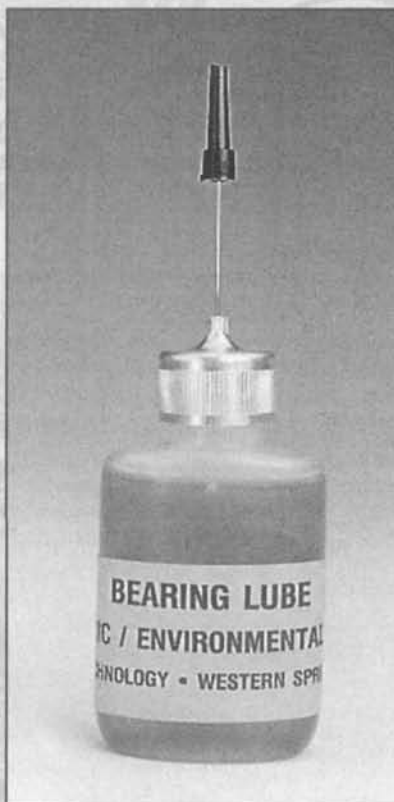
made for installing the seals in shock absorbers. It's made of soft plastic, and it's just the right size for most of the bearings I use.

After you've removed it, put the bearing on a clean, lint-free rag. Brush off the dirt and dust with a medium-size dry paintbrush or soft rag. If the bearing is the metal, sealed type, spray it well from both sides with motor spray or contact cleaner, and allow it to dry completely.

You could also put it into a small glass jar that contains a bearing-cleaning solution sold by companies such as Racer's Choice*, or use some straight lacquer thinner. Agitate the bearings in the container every couple of hours. Remember, you'll force dirt into the bearing if you use dirty bearing solution or lacquer thinner. I leave my bearings in thinner overnight, and then I allow them to air dry. You could also hit them with a shot of compressed air, but hang on! They'll fly right across the room and into another galaxy if you're not careful!

I re-oil my bearings with a thin, low-viscosity lubricant. Mobil 1 5WT oil mixed with air-compressor oil works very well, as do products from Aero-Car Technology*, CRC*, Bolink*, Trinity and many others. People used to use high-temp grease to heat up bearings in a pan. The grease would get thin, run into the races and coat the balls. After they had cooled off, the bearings would be well-packed with grease, and the balls would be protected within the races. This procedure also made the bearings rather stiff and got lots of people in trouble with members of their household who used those pans for cooking!

Remember: keep your bearings clean and properly maintained, and most will last for the life of your car or truck. Even off-road cars and trucks can make it through a season or more with the original set of bearings. They just keep going around, and around, and around...



After you've cleaned your bearings properly, lubricate them with quality bearing lube; don't over-lube, though, or the bearings will attract dirt too quickly.



**National Radio Control
Truck Pulling
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Est. 1989

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NR/CTPA
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Don Hubert, President

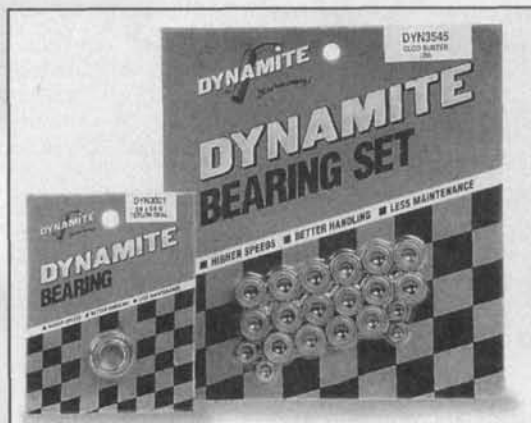
Where Can You Buy Bearings?

Bearings are actually easy to find. Every kit manufacturer sells complete bearing kits for their lines of cars and trucks, and many of them, such as Losi* and Associated*, also sell bearings in singles and pairs in the most common sizes. After-market firms such as Trinity* also sell complete sets and individual bearings in popular sizes. Local bearing

houses (check the Yellow Pages) often carry miniature bearings, but not always in every size you might need. That's why Boca Bearing* and similar suppliers, such as Dynamite* and Competition Products*, sell bearings any way you want them: one at a time and by the bag. Dynamite sells complete sets, but they also supply many of the bearings that are sold one at a

time by hobby shops all across the country. Boca can supply you with virtually any size bearing you could ever need, including those for models that have been out of production for a long time.

How do you know what size to buy? The best place to start looking is your assembly manual. You do still have it, don't you? If not, try a hobby shop; they might have a reference copy that they can check. The big hobby-industry bearing suppliers keep reference volumes handy that list the right sizes for many models. Chances are that they'll be able to tell you what size you need and ship it to you—all after one phone call. You can also call your car's manufacturer and ask for information on bearing sizes for your model, or you can use a set of calipers to measure the old bushings.



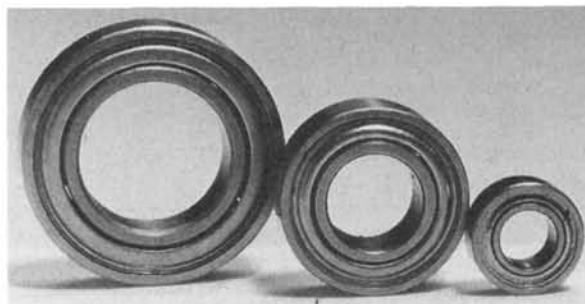
Certain companies, such as Dynamite, sell bearings separately and in complete sets.

new, one with lubricated bushings and the other with ball bearings. You'll notice that the bearing-equipped car enjoys a small performance advantage—at first. It's a different story 10 runs later. Bushings actually do a pretty good job of reducing friction, but they aren't as durable as ball-raced bearings. They rely on oil that soaks into the pores of the metal (Oilite bronze) or sits on the surface of self-lubricating bushing plastics such as nylon. But bushings don't maintain gear-mesh clearances well, and ball-raced bear-

ings do. Whether you're talking about maintaining precise gear-mesh clearances within a transmission or reducing slop in hubs and wheels, you just can't beat bearings for keeping things tight and smooth.

So, to preserve those tight clearances and reduce rolling friction, it's important to maintain your bearings. Unfortunately, bearings are exposed to an awful lot of crud that's flying around. You want to protect them from the elements, but you also want to seal in some of the lubricant that would

otherwise fling off at those high relative speeds. You do that by putting seals on each side of the bearing; the seals attach to the inner and outer races in such a way that they don't restrain or interrupt the movement of the balls as they zip around on their little grooved track.



So that you can fully equip your vehicle, bearings come in a variety of standard and metric sizes.

*Addresses are listed alphabetically in the Index of Manufacturers on page 160.

We here at *Car Action* have done a lot of talking about parking-lot racing; a lot of talking and not enough racing. Sure, a couple of us get together now and again and bash around, but we haven't run much on a real track. Because there aren't any tracks nearby, we decided to build our own, and like you, we wanted to do it using as little money as possible.



Here's a view of the track as we started to lay down the hose. At this point, the hose wasn't painted or nailed to the ground, but it was flat enough to test it out with our sedans.

CAR ACTION
WORLD'S PREMIER R/C CAR MAGAZINE



Sean "Hammer" Cilbrith helped us hammer the hose to the track; later, he hammered us off the track!

Building the CAR ACTION Track

by John Huber



Doogie painted the start/finish line with a heavy coat of white spray paint.



We used large pieces of cardboard to mask out the hose for painting. For even coverage, we applied two coats of red paint.

STEP 1: FIND A PARKING LOT

We used the parking lot behind our photo studio. The studio is an old office that we outgrew several years ago, and the parking lot is mostly empty except for three large storage bins. At first glance, the lot isn't very impressive, and it isn't the smoothest thing in the world. There were a few sandy spots, a few weeds sprouting through the asphalt and a bunch of wavy sections; we didn't care, we just wanted to race on a track!

SUPPLIES

As you might expect, you need more to build a track than a few cars and a parking lot. The surprise is that the stuff you need is cheap or free! I had seen tracks with fire hose laid out for the perimeter and infield, and I thought this would be great if I could get some hose. The other option was to use boards, but these would have to be bought (unless we could find a suitable tree and were in the mood to saw it into 2x4s). We opted for the hose.

I called the local fire department and explained to the chief what I was looking for. He informed me that they test the hoses several times a year, and that all of the bad hose has to be discarded. He didn't have any at the moment, but he took my name and number and promised to call if he could help. A few weeks later, he did. A large company in the area was disbanding its fire crew and had called the fire department to see if they could use the hose that was left lying around. Because the hose's condition was questionable, the fire department decided they didn't need it and passed the company contact on to me. I was over there the next day with Doogie; we loaded a van with about 25 50-foot rolls of hose! That's about 1,250 feet of hose: yeah, that should do!

Besides the hose, we also needed some sort of corner dots. Corner dots are simply frisbee-shaped disks that are about 1 inch high in the center and taper down on all sides. Many tracks we've been to use plow disks as corner markers. Plow disks are steel and are used to weigh down wheels on tractors for better traction. Though they work great, they're not inexpensive or easy to



A Tamiya corner marker.

find. Luckily, Tamiya has just released a set of corner markers that are inexpensive and work great (part no. 53190). Five come in a pack, and they're molded out of flexible orange plastic. A full-size car can run right over them and they'll pop right back into shape. We ordered two packs from Tamiya and used them for our track. Other than these two items, all we used were some masonry nails and red spray paint.

STEP 2: BUILDING

First, we cleaned the parking lot. This involved a lot of sweeping and scooping. We also used a leaf blower to get rid of the dust that we couldn't get with the broom. The weeds were easy enough to pull up, and Doogie trimmed the branches near the perimeter with a shovel and pitchfork.

Then it was time to begin laying out the hose. All of the hose had large metal couplings on each end. We used a sharp, serrated knife to cut these off, and it was easier than we thought it would be. We then began to roll out the hose to form the perimeter of the track. We were amazed by how fast a roll ran out, but, luckily, we had quite a few. We continued rolling out the hose and soon had the start of a real track. We made one gigantic straight and then began to make a twisty infield. We made some very sharp turns and some sweeping wide turns connected by short straights. When we had a complete layout, we did some

Pavement Project

test driving to see how we liked the design.

The flat hose marked the lanes well, yet it still allowed the cars to cross without getting stuck. Using the flat hose in the infield reduced the need for turn marshals; we just had to keep our eyes on Chianelli to prevent him from cutting the course.



We used some old wooden pallets for the drivers' stand, which we placed in the shade at an excellent vantage point.

STEP 3: FINISHING

When we were satisfied with the layout of the track, we began the finishing touches. To make the hose more visible, we got some red spray paint. We painted 3 feet of hose red, left the next 3 unpainted and then alternated between the two. We started painting just the turn sections of the track, but as we went along, we were amazed at how good the paint looked. We then proceeded to do the entire track, which took a while to complete. One can of paint did about nine or 10 3-foot sections, so we needed quite a few cans of paint. The hose soaked the red paint up pretty well, so we applied a second coat.

We laid the dots down at the turns and used nails to keep them in place. When the paint was dry, we began nailing the hose to the pavement using concrete nails. The nails I bought were about 1 inch long and very thick and beefy. We put two nails on the red/white breaks, and one more in the middle of each section. I recommend that you wear eye protection (as we did) when nailing. Every so often, we'd get a good spark flying, and sometimes we'd miss the nail head and hit a pebble, sending it flying across the lot.

After a good afternoon of painting and nailing, we had finished the track. We're thinking about painting in the infield sections with green paint, or laying down green indoor/outdoor carpet. We'll worry about that later. For now, we're just going to go out there and kick one another's butts!

CAR ACTION'S

Sedan Tire & Wheel Guide



Rubber Roundup

by John Huber

Photos by
Walter Sidas

With the increasing popularity of racing sedans, tires and rims are becoming more and more important. Several manufacturers recently developed tires for these parking-lot wonders, and there are more rims to mount the tires on than you can shake an antenna at. We gathered and reviewed the most current treads and rims on the market today. Take a look at what we found.

Sedan Tire & Wheel Guide

TAMIYA

Tamiya* started the whole sedan-racing phenom, so it's no wonder that they offer a wide choice of tires. A standard slick or a standard treaded tire is included with each of their parking-lot sedans, and that's just for starters.

• **Slicks.** Sedans such as the Alfa Romeo come with totally slick, hard-rubber tires. Hard rubber resists wear, but it isn't good for traction. On clean, smooth surfaces, these tires work very well with a stock motor, but with a modified motor, they leave something to be desired. Inserts are not included with the tires or in the original kits that use these tires, but you can easily add them. Use Tamiya inserts (part nos. 53113, 53156, 53204) or whatever insert material you can find.

Tamiya also has some new slicks that are like the original kit tires but a little wider. These tires come with inserts and fit on Tamiya's wide rims (no. 50549), which come with the new TA02W chassis. They should also fit on HPI's wide rims.

For more performance, check out Tamiya's super-slick tires (no. 53133). They look almost the same as the standard slicks, but they're made of a much softer rubber compound. Like the wide tires, the super slicks come with inserts, which are definitely needed. With these tires, traction is much better than with the stock slick tires included with the kits, but these will wear out faster.

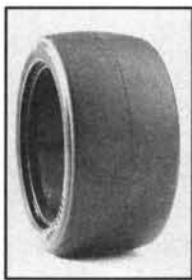
Tamiya is coming out with even more new tires and accessories that weren't available to photograph at this time. These items include M-grip slicks (no. 53178—regular; no. 53215—wide) and shaped inserts (no. 53209—regular; no. 53216—wide). The M-compound tires are considered mediums, and they fall between the soft super slicks and hard kit slicks. Also coming soon are M2 compounds that fall between the M-compounds and super slicks.

• **Treads.** Tamiya only makes treaded tires that come stock with kits, e.g., the FWD Castrol Civic (no. 50419). These tires are about the same compound as the stock Tamiya slicks, but they have treads. The treads help traction a little and also help the car handle dirty tracks. A new set of super-grip treaded tires (no. 53214) will be available soon.



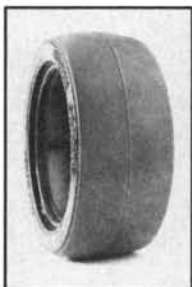
Tamiya standard slick

Circ.: 8.0625 in.
Width: 1.0 in.
Height: .3125 in.
Part no.: 50454



Tamiya wide slick

Circ.: 8.0625 in.
Width: 1.25 in.
Height: .3125 in.
Part no.: 50547



Super slicks

Circ.: 8.0625 in.
Width: 1.0 in.
Height: .3125 in.
Part no.: 53133



Tamiya tread

Circ.: 8.0625 in.
Width: 1.0 in.
Height: .3125 in.
Part no.: 50419

HOT SHOES

• **Slicks.** Hot Shoes* offers two types of slick tires for sedans. The tires are available in both wide and narrow widths in a medium compound. They should prove to wear very well and still provide good traction. The tires don't come with inserts, but it would probably be a good idea to get some.

Hot Shoes standard

Circ.: 8.1875 in.
Width: 1.0 in.
Height: .3125 in.
Part no.: n/a



Hot Shoes wide

Circ.: 8.1875 in.
Width: 1.25 in.
Height: .3125 in.
Part no.: n/a

PRO LINE

Pro-Line's* tires are based on their very popular Road Hawk tires that were released a couple of years ago. The Sedan Hawks have a radial tread pattern that looks almost like an Aquatread pattern. The soft-rubber compound and tread design give these tires tons of traction, but tire life suffers a bit. The Sedan Hawks come with insert material, which is a nice bonus, but the inserts need to be trimmed to fit inside the smaller sedan tires.

Pro-Line Sedan Hawk

Circ.: 7.8750 in.
Width: 1.1 in.
Height: .250 in.
Part no.: 1066



Inserts

Semi-pneumatic tires are used for sedans. They're filled with air, but they're not sealed and pressurized. Give 'em a squeeze, and the air inside whooshes out very easily. Softer tires are easier to collapse than stiff ones, but there are ways to make them stronger.

Inserts are simply light, soft-foam cores that are used to fill the insides of tires. Some come in a donut shape; others are flat strips that form a donut when inserted in the tire. Pro-Line Sedan Hawks come with a donut that must be cut to the correct length and width.

With any insert, there are some things you should look out for to make them work as they should. If the donuts are the right size for your tires, they should fit easily; just make sure they're seated correctly and not folded over or twisted inside the tire. Strips are also pretty simple to insert, just make sure they're long enough, or you'll end up

with a soft spot on the tire. Also, make sure that they're seated properly. When gluing the tires to the rims, make sure that the glue doesn't get on the insert material, or you'll have problems. Some foam inserts will melt when they come in contact with CA; some will harden and feel as if a rock is in the tire.

Tamiya has just come out with the next generation of inserts: shaped tire inserts (no. 53209; no. 53216) made out of molded foam and shaped to give the tire proper support. When installed, they make the tires feel very firm—just like real inflated radials but with the rubber's natural stickiness.

Gluing Tires To Your Rims

Unless you feel like chasing after your tires, you should glue them to your rims. Glue them firmly, but not permanently, because you'll probably want to use the rims again after the tires have worn out.

First, get some good-quality thin and medium CA and some kicker. Insert the foam in the tires, and stretch the rubber over the rims. Make sure that the inserts are positioned properly, and that there are no soft or hard sections. The tire should be seated on the rim properly.

For the ultimate in adhesion, lift up a small section of the tire's bead and apply a few drops of medium CA. If you keep the bead lifted for a couple of seconds, the glue will travel around the rim. Let the bead go, and seat it again. Work the glue around the tire, but don't get too much glue in the bead, or it will seep into the insert and harden. When you've finished, add a couple of drops of thin CA to the outside, where the plastic meets the rubber. Tilt the tire around to distribute the glue for a good, strong edge seal.

For a better chance of removing the tire after it has worn out, don't lift the bead of the tire. Instead, just apply thin CA to the rubber/plastic

edge. Flex the sidewall slightly to let the CA seep in a little, but don't let in too much. When you've finished, the tire should be securely attached to the rim, but the entire bead won't be glued to the inside of the wheel. Most of the tire should just pull off, leaving only slight traces of glue or rubber, which can be removed with a knife or sandpaper.

TIPS

• **Use kicker to harden glue that hasn't cured, but be careful because the spray can sometimes affect the plastic rim.**

• **Wear eye protection and gloves when you work with CA. Take it from me: you don't want to go to the emergency room to have a drop of CA removed from your eye, or to have a tire unglued from your fingers; it's not fun! I've worked with CA for years and have had no problems until this year. I put some thin CA on a rim and let the tire snap back onto the rim. A tiny drop of CA nailed me right in the eye. It didn't glue my eye shut, but it did dry on my cornea. A doctor removed it with a cotton swab, but it wasn't very comfortable. Be warned!**

YOKOMO

• **Slicks.** Yokomo* offers two types of rubber tires: foam tires (that come with older kits) and rubber slicks (that come with newer kits). The rubber compound is softer than that used for Tamiya's stock slicks, but it's harder than the rubber on their super slicks. I guess you could call it a medium compound. These tires come with donut-shape inserts that resist bunching up a little better than Tamiya's strip inserts.

• **Treads.** Yokomo's medium-compound treads are nice performers. They have a pretty thick tread, so they should last a while. Like the slicks, they come with a donut-shape insert.



Yokomo/Hot Laps slick

Circ.: 8.1250 in.
Width: 1.0 in.
Height: .250 in.
Part no.: n/a



Yokomo/Hot Laps tread

Circ.: 8.1250 in.
Width: 1.0 in.
Height: .250 in.
Part no.: n/a

HPI

HPI* was one of the first companies to make parts and tires for sedans. Slick and radial-tread patterns are available in wide and standard versions. The rubber compound wears very well, and the tires still provide lots of traction.

• **Slicks.** HPI's slicks (no. 4516—wide; no. 4515—standard) are softer than standard Tamiya slicks. I would rate them as softs, so they definitely need inserts. It's nice to have the choice between wide and standard widths to suit traction to your needs. These tires provide great traction on clean pavement.

• **Treads.** HPI's treads are just as nice as their slicks. They're molded of the same soft-compound rubber and have a beautiful tread pattern. The pattern is non-directional, so you don't have to worry about how you mount them to the rims. The treaded pattern is a good choice for slightly dirtier surfaces where you need all the traction you can get (no. 5130—standard; no. 4511—wide).



HPI standard slick

Circ.: 8.125 in.
Width: 1.0 in.
Height: .250 in.
Part no.: 4515



HPI wide tread

Circ.: 8.125 in.
Width: 1.25 in.
Height: .250 in.
Part no.: 4511



HPI standard tread

Circ.: 8.125 in.
Width: 1.0 in.
Height: .250 in.
Part no.: 5130



HPI wide slick

Circ.: 8.125 in.
Width: 1.25 in.
Height: .250 in.
Part no.: 4516

Sedan Tire Wheel Guide

Interchangeability

The hot, new HPI wheels look pretty sharp, but will they fit on your new sedan? And those new Kyosho® wheels are pretty slick-lookin'. Will they fit on your new car, too?

The answer is that most wheels can be used on all the popular sedans, e.g., Tamiya, Kyosho and Yokomo. Here's the scoop:
■ Tamiya's wheels will fit on Kyosho and

Yokomo cars. (Use Tamiya's hex adapters—no. 53056—for Yokomo cars.)
■ HPI's wheels can be used on Tamiya, Kyosho and Yokomo cars. (Use Tamiya's hex adapters for Yokomo cars.)

■ Yokomo's wheels will also fit on Tamiya cars. You'll have to remove the hex adapters on Tamiya sedans. *Note: Yokomo wheels can't be used on Kyosho sedans.*
■ Kyosho's wheels will also fit on Tamiya and

TAMIYA



Style: Alfa Romeo 155
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: black
Part no.: 50512



Style: Celica GT-FOUR
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50420



Style: Tom's Levin
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50427



Style: Renault Clio
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: silver
Part no.: 50537



Style: Mugen Honda Civic
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: silver
Part no.: 50491



Style: AMG Mercedes-Benz
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: charcoal
Part no.: 50539



Style: Ford Mondeo
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50550



Style: BMW M3 Mesh
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50468



Style: Lancia Delta
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50475



Style: Castrol Honda Civic
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 504513



Style: Nissan 300ZX front
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: chrome/gold
Part no.: 50548



Style: Nissan Skyline GT-R
Bead Diameter: 1.875 in.
Width: 1.0 in.
Color: charcoal
Part no.: 50432



Style: Castrol Celica
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50522



Style: Mercedes-Benz 190E
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: silver
Part no.: 50456



Style: ProMarkt Mercedes
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: charcoal
Part no.: 0445539



Style: Nissan 300ZX rear
Bead diameter: 1.875 in.
Width: 1.25 in.
Color: chrome/gold
Part no.: 50549



Style: Opel Calibra
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50634



Style: Castrol Primera
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50557



Style: Blitz Toyota Supra
Bead diameter: 1.875 in.
Width: 1.0 in.
Color: white
Part no.: 50535

Yokomo sedans (add the hex adapters to the Yokomo car). Wheels that aren't specifically intended for certain cars may alter the car's width. Check this out before you buy.

YOKOMO



Style: YR-4 7-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: white
Part no.: ZR045—wide;
ZR040—narrow



Style: 3-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black/white
Part no.: 3600 WN; 3601
BN; 3602 CN; 3605 WW;
3606 BW; 3607 CW.



Style: 7-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black
Part no.: 3558 CN; 3557
BN; 3569 BW; 3670 CW.



Style: new 6-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black
Part no.: n/a



Style: 5-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black
Part no.: 3554 CN; 3566
CW; 2651 BN; 3563 BW.



Style: 6-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black/white
Part no.: 3555 CN; 3567
CW; 2652 BN; 3565 BN.



Style: new 5-spoke
Bead diameter: 1.875 in.
Width: 1.0 or 1.25 in.
Color: chrome/black
Part no.: n/a

HPI ABBREVIATIONS

WN= white narrow
BN= black narrow
CN= chrome narrow
WW= white wide
BW= black wide
CW= chrome wide

* Addresses are listed
alphabetically in the Index of
Manufacturers on page 160.



**THE
CHAMPION'S
CHOICE**

Super Machine II SUSPENSION FRONT END

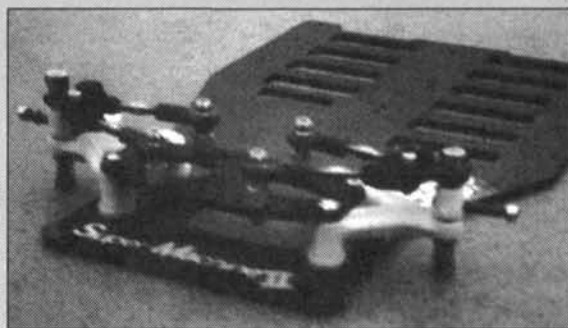
After traveling across the country racing, we have found that many of the tracks have their rough spots. Sometimes a stock front end can not handle these spots very well! But now after much testing we have developed the **Super Machine II** FRONT END to help solve this problem.

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- 5238 Air Flow Wing.....\$ 8.95
- 5240 Pro Flow Wing.....\$ 4.95
- 5241 Super Air Flow Wing\$ 9.95
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NEW 1/18 SUPER

- 120 Super truck kit, suspension front end & rear end,
new style balanced motor, HOT!\$69.95
- 121 T-Type Stock Car.....\$69.95



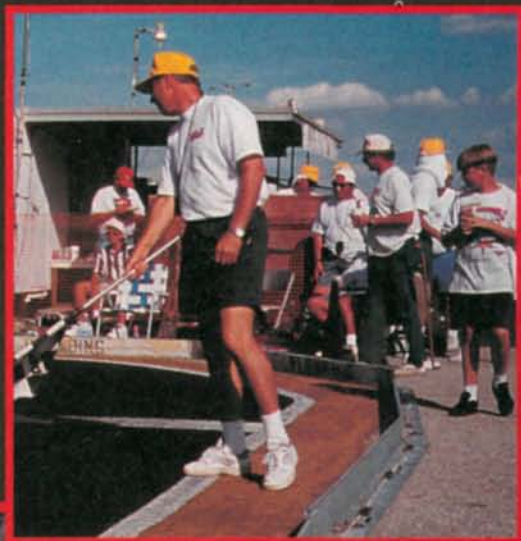
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Florida Nats

by RICK SCHWARTZ



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1/8 4WD
A-Main
drivers.



PHOTOS BY RICK SCHWARTZ

FUEL IN
AND
DUEL IN



Overall winners (from left to right) 2WD: Maurizio Busnardo, 4WD: Ralph Burch, Jr., 1/10: Art Carbonell.

WELCOME TO Florida and the 19th annual Southern Gas Championship sponsored by the Ft. Myers R/C Car Club. One hundred and twenty racers spent a week truing tires, adjusting carbs and dialing in their suspensions

amid the smell of burning rubber and nitro fumes.



THE TRACK

Located next to the Lee County Civic Center, the track is a permanent facility that warrants a world-class race. The layout is huge and allows these jets on wheels to reach full speed on the straight-away. The pit area is large enough to accommodate the crews necessary for a 10-car heat, and it's adjacent to the drivers' stand, which facilitates driver/crew communication.

THE QUALIFIERS

The qualifying heats were run on Thursday and Friday, and each racer had six opportunities to take the TQ. The club used an IFMAR start, and each racer had 5 minutes per run. Serpent's* Art Carbonell had the best time in 1/10 2WD, turning 22 laps in 5:08.1.

Michael Salven (from the Netherlands) was a hair behind with 22 laps in 5:09.9, with Dave Campbell (from Iowa) in third with 21 in 5:00.0. These cars were flying, and they turned in better times than the 1/8 2WD racers. Campbell again made the top three, this time in 1/8

Who Won?

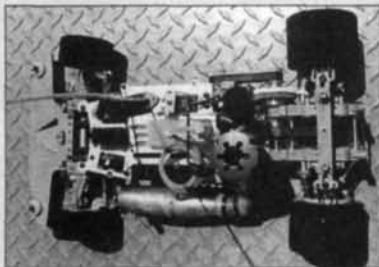
Who Won?							
1/10 2WD							
Fin	Qual	Name	Chassis	Engine	Radio	Body	Tires
1	1	Art Carbonell	Serpent	Serpent	KO Ex-1	Dahm's	Ellegi
2	3	Dave Campbell	Delta	NovaRossi	KO	Dahm's	Delta
3	2	Michael Salven	Serpent	Serpent	KO Esprit II	Serpent	RCM/Ellegi
4	7	Ted Hammer	Delta	NovaRossi	KO Ex-1	Dahm's	Delta
5	9	Jay Briscoe	Serpent	Serpent	Airtronics	n/a	n/a
6	4	Frank Calandra	Serpent	Serpent	JR Propo	Dahm's	RCM
7	10	Joe Sullivan	Serpent	NovaRossi	Airtronics	Dahm's	Dart
8	5	Daniel Horta	PB Apollo	Serpent	Airtronics	Dahm's	Ellegi
9	8	Ledo Agüero	Serpent	NovaRossi	KO	BMT	n/a
10	6	Don Jones	BMT	Mega	JR Propo	Dahm's	RCM
1/8 2WD							
Fin	Qual	Name	Chassis	Engine	Radio	Body	Tires
1	2	Maurizio Busnardo	Serpent	Serpent	Sanwa	Parma	Enneti
2	1	Dave Campbell	Delta	NovaRossi	KO	Parma	Delta
3	8	Ted Hammer	Delta	Paris	KO	BMT	Delta
4	4	Keith Gillis	Delta	NovaRossi	n/a	n/a	Delta
5	3	Brent Gottfried	Delta	NovaRossi	Airtronics	Parma	Delta
6	6	Greg Birch	Serpent	Paris	Futaba	Elfin	RCM
7	9	Donnie Cooper	Delta	NovaRossi	Futaba	Parma	Delta
8	10	Larry Martin	Assoc	Paris	Futaba	Elfin	Delta
9	5	Jimmy Piersol	Delta	NovaRossi	JR Propo	Parma	Assoc/Paris
10	7	Ed Delgado	Serpent	NovaRossi	Airtronics	Serpent	Delta
1/8 4WD							
Fin	Qual	Name	Chassis	Engine	Radio	Body	Tires
1	1	Ralph Burch, Jr.	BMT	BMT	KO Propo	Lola	Arrows
2	9	Art Carbonell	Serpent	Serpent	KO EX-1	n/a	Ellegi
3	5	Alessandro Aspesi	BMT	NovaRossi	Sanwa	Lola	Ellegi
4	2	Michael Salven	Serpent	Serpent	KO Esprit	Lola	RCM/Ellegi
5	3	Fabio Domanin	BMT	Mondial	Apex	Lola	BMT
6	8	Massimo Fantini	BMT	BMT	Apex	Lola	BMT
7	10	Mike Blackstock	BMT	JP Racing	JR Propo	Lola	Arrows
8	6	Sahli Roger	BMT	BMT	Multiplex	Lola	Serpent
9	4	Frank Calandra	Serpent	Serpent	JR Propo	Lola	RCM
10	7	Stefano Solaroli	BMT	BMT	Apex	Lola	BMT



New in the Fla. Nats Pits

Radio active

From BMT comes the new Active 95 Hi-Trac Pack—the car Ralph Burch drove to the 1/8 4WD winners' circle. It has new shocks with coil-over ends; a rear roll bar; a new,



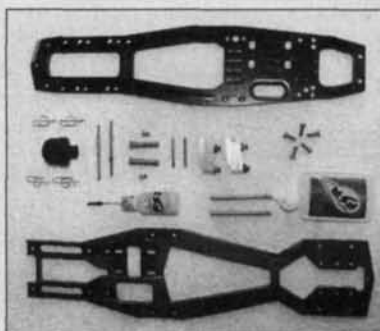
quick-change rear; and redesigned front and rear bulkheads. The car sports a new Mondial 3.5cc engine with a six-bolt mount to prevent front case flex at high rpm.

Full-speed grab bag

Team FSR* (Full Speed Racing) had a lot of add-ons. Their JP Racing tire gluer looked as if it were giving a transfusion, but it does the job and allows 1/10 and 1/8 tires to be cemented on in less than 5

seconds—fast and clean. Their JP motor is the latest RX 21 long-stroke prototype.

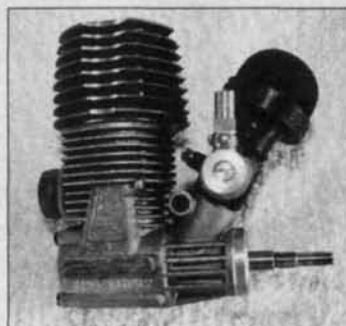
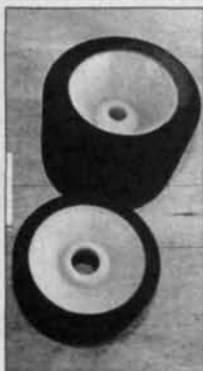
From the parts bin come, in no particular order, a 7075 T-6 6mm chassis for the BMT and Serpent, nitride-coated titanium tie rods and shock shafts, titanium screws and pivot pins, T-6 aluminum motor mounts, air filters, silicone shock oil and last, but not least, anodized body posts.



Speedline

Mike Queller of Speedline* showed off some of his company's hot products. The Super G tires are the only 1/8-scale rubber manufactured in the U.S. They're cut with a water jet to prevent distortion, and they can be mounted on BMT or Serpent rims.

Two new engines are now available from TQ Engines. The TQ 10 Turbo—a 3.5cc hummer—is based on a NovaRossi* 10 port with an extruded crankshaft. This increases power by improving the velocity of fuel through the crankshaft. It's also available in the long-stroke version. The TQ 8 is an eight-port version with a standard plug.



2WD with a TQ run of 22 laps in 5:12.6. Venezuelan champion Maurizio Busnardo was 1/2 second behind with 22 laps in 5:13.1, and Brent Gottfried was third with 21 laps in 5:02.7. The last group to decide the final grid were the 1/8 4WD racers. These are the big boys of the sport—rocket sleds on four wheels. Ralph Burch Jr.—a well-known name in racing circles—was the TQ with his BMT* Active with 24 laps in 5:00.00. Michael Salven was second with 24 in 5:04.5 and Italy's Fabio Domanin showed with 24 in 5:09.2.

THE MAINS

You want long races? How about 45-minute Mains! For the spectators, it was find a chair, put up an umbrella, grab a drink and cheer. For the drivers, it was a true test of physical and mental endurance. For the cars, you just hoped that all the nuts were torqued and the engines were tuned just right. For the pit crews, you had nine or 10 pit stops that had to be completed in seconds.

• **1/10 A-Main.** You could feel the tension

in the air. Former world champion Art Carbonell led from start to finish in the 1/10 2WD class and finished six laps ahead of the rest of the field with 179 laps in 45:05.7. Third-place qualifier Dave Campbell moved up to the number-two spot with 173 laps in 45:07.8. Michael Salven turned 171 laps in 45:13.2 for third position.

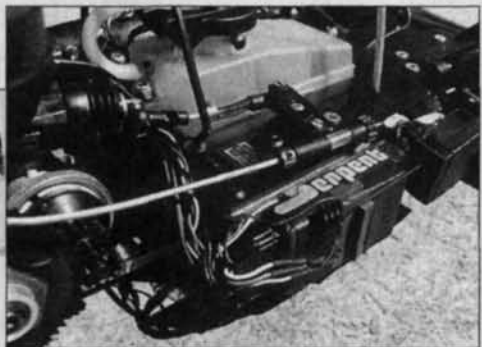
• **1/8 2WD A-Main.** In 1/8 2WD, Maurizio Busnardo showed why he is a four-time South American champion,

New in the Fla. Nats Pits

Snake Oil

Serpent's director Pieter Bervoets, who came all the way from Holland for the race, provided me with a grand tour of his company's parts display. Like a proud father, he showed me the Trackside Analyzer and Recorder Star. It attaches to the car and, after the run, the information gathered is fed into a computer. It provides all the information necessary for the maximum setup, including lap times, engine temperature and car speed. Additionally, tire compound, track size and conditions and the car's setup are also computed.

The new 1/10 Impact Pro-2



is completely redesigned in 2WD and 4WD versions. They started from scratch and came up with much lighter racers. Serpent's newest motor is also completely re-designed. The Mega SX 21, made by NovaRossi, has a five-port transfer crankcase layout.



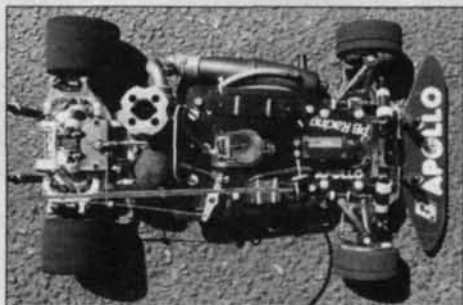
also fits the same vehicles. One of his hottest sellers is the carbide tire cutter for the Maxmod tire-truing machine.

Mico's Alignment Machine is a work of art. Based on a real alignment machine, it's a complete chassis alignment system designed for the new generation of cars. It can set camber, caster, wheel-base widths and toe-in and toe-out. If you want total geometric alignment, this baby is for you. An optional tweak board is also available.

Apollo launch

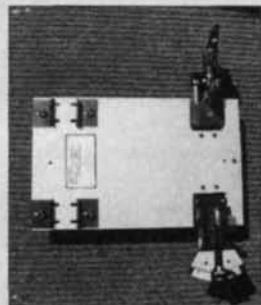
England's PB Racing introduced its new 1/10 PB Apollo Vari. If you want aluminum, it has it. The chassis, tranny housing, rear suspension and lower, front A-arms are machined out of aircraft aluminum.

New and out of the box, it placed in the A-Main. Joe Sullivan of Ja-Lea Distributors* handles this English racer for the American market.



Mico mania

Surrounded by hundreds of gas parts in his trailer, Mike Saputo of Mico Racing Enterprises* displayed some of his new wares. Made of a special aerospace alloy, his replacement chassis fits the Serpent Mark 2 and the original 9000. The Delron front body mount



blistering the track with 183 laps in 45:08.8 for the checkered flag. Six laps behind in second, Dave Campbell turned 177 laps in 45:02.1. After 45 minutes, Ted Hammer was only 3 seconds behind Campbell and had to settle for third with 177 laps in 45:11.9.

• **1/8 4WD A-Main.** Now we're talking real speed! TQ Ralph Burch took first with 209 laps in 45:13.0. He was as smooth as glass during the whole race and never faltered. Art Carbonell came

up from ninth place on the grid to drive an error-free race and take the second spot, eight laps behind Burch, with 201 laps in 45:06.8. Allesandro Aspesi, turning 199 laps in 45:00.8, took the third-place award home to Italy. One of the most exciting racers to watch was Michael Salven. He went out for several minutes with mechanical trouble, but drove like a madman to come back and finish in the fourth position.

FINAL THOUGHTS

It was a long six days for these racers, but they got a lot of time on the track to show their skills. The weather was beautiful, and the racers were serious, but friendly. Race promoter Jim Rice added a special touch by giving the racers beautiful white satin jackets in lieu of trophies. I know a trophy doesn't keep me warm on a cold night.

*Addresses are listed alphabetically in the Index of Manufacturers on page 160.

From the track to the parking lot.
This is the R/C action as **you** see it.

Grassroots

RACING

This is YOUR PAGE—YOURS!! It belongs to you, the optimistic local racer on a budget who's looking for some evenly matched action; the individual who's in it for the fun of it all: the grassroots racer—whether on-road or off-road. We at *Car Action* really do want to see your tracks, your cars and your local heroes—men, women, boys and girls (we love cats and dogs, too!). Show us your local racing scene! Send photos with captions to "Grassroots Racing," *Radio Control Car Action*, 251 Danbury Rd., Wilton, CT 06897-3035.

TRACK BUILDING



What started out as a lot of trees and brush turned into Dave Cowan's off-road and clay oval tracks in Wycombe, PA. This NORRCA-sanctioned track hosts races for all classes and ability levels—every Wednesday and Sunday.



call now!

Whether you're a dealer or just a bunch of fun-lovers in search of a race program, call now! Here are a few hotline numbers to call if you have any questions, or if you'd like to start a program in your area.

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Kyosho R/C Sport Racing
(800) 682-8948 ext. 085F

Hobby Shack Parking Lot
(714) 964-8846

Hobby Town USA Parking Lot
(402) 434-5050

Trinity's Street Spec Series
(908) 862-1705

COMING SOON to a Parking Lot Near You...

Cost-controlled racing is alive and well and running in South Jersey. With fun in mind, race director Ray Murray put together a CCR series; the result is an inexpensive, competitive racing program that's held at parking lots throughout the area. The season's first race was at Quila's Mexican Restaurant in Marlton, NJ. Four classes, including Nascar, Nastruck, Legends and Trinity Street Spec, were run that day.



Nascar honors were taken by father/son team Jeff Jones and 12-year-old Derrick, who took first and second, respectively. Longtime racer Tom Lane held off a hard-charging Scooby Horton to take first in Nastruck, Jim Kelly took the Legends honors, and Lee Miller took the checkered flag in Trinity Street Spec. Overall, it was a great day of racing. For more information about this series, call Ray Murray at (609) 629-4809.

Rules

- All classes must run 6-cell packs and a "Dustbuster" closed-endbell motor.
- No wings or rear cutouts allowed.
- Gear ratio is fixed (5:1).

Cost

- Motors—only \$3.
- Entry fee—ONLY \$5.



SHACK ATTACK

Here's a look at another day of Hobby Shack parking-lot racing action.

This Tamiya Prerunner catches some air during the Stadium class qualifiers.

The Stadium class attracted all kinds of vehicles.

Already popular in Japan, racing Mini Coopers is catching on at many local parking-lot races.

These races attract male and female drivers of all ages, backgrounds and abilities.

Lucky 13

Despite a two-hour rain delay and intermittent drizzle, Tamiya Championship Series Race no. 13 drew a record crowd to Action Hobbies in Tulsa, OK. A total of 103 racers participated, and 109 spectators, ranging in age from 7 to 62—54 of whom were first-timers—signed the guest book. As well as this fantastic spectator turnout, the race also boasted the most 4x4 Truck class entrants to date; 21 racers chose the Chevy S-10 and Toyota Prerunner.

And the winners were...

F1 Stock

- 1—Jason Davis
- 2—Neal Sartor
- 3—Chris Adams

F1 Modified

- 1—Doug Gaut
- 2—Jeff Schaadt
- 3—Walter Lowe

Sedan Stock

- 1—Jim Ewers
- 2—Jim Scott
- 3—Randy Cook

Sedan Modified

- 1—Bob Enochs
- 2—Otto Westerfield
- 3—Brian Strickland

GTP & GTO Stock

- 1—Bob Enochs
- 2—Jason Davis
- 3—John Watt

4x4 Racing Truck

- 1—Eric Tipton
- 2—Dunn Henderson
- 3—Mark Henderson

Best of Show F1

Doug Gaut

Top Rookie

Brian Schaadt

Best of Show Sedan

Bob Enochs

Best of Show GTP

Ray Parker

Best of Show Truck

Eric Tipton

Top Rookie Truck

Benjamin Smart

TECH HEAD

by Frank Masi



Once in a while, you just have to grab serious air! The straighter and more stable your car is as it leaves the jump, the better it will fly and land.

Advanced Off-Road Driving Techniques

Although it's often overlooked by many novice and intermediate off-road drivers, throttle control is everything. The following are three examples of common situations in which proper use of throttle can fix an otherwise frustrating driving problem.

Driving Error number 1

WHEELSPIN AND POOR TRACTION

Way too many people drive trigger-happy; they're either full-on or full-off. At your next race, stand as close to the track as possible, and watch the cars. Notice how much wheelspin occurs; every time a car's spinning wheels hit a bump or rut, the car is thrown sideways. The driver's most

SOLUTION

Practice "partial throttle" driving. Learn how to drive around difficult sections of the course using $\frac{1}{2}$ to $\frac{3}{4}$ throttle. It's best to do this during practice, and it's easier when there are fewer cars on the track. You'll find that your car will actually travel faster through bumps when driven at partial throttle, because its suspension isn't compressing and rebounding as quickly, as far and with as much force.

Got a problem with traction? Before you start changing your car's setup, try using some simple driving techniques; you'll be surprised at how much better your car will handle.



common misconception is that he's using the wrong rear tires. Chances are, if the driver would just ease back on the power a little to stop the wheels from spinning, the car would track straight over even the roughest sections of the track. Racers have a tendency to blame equipment for driving errors when it's usually not to blame.

If you have a high-end radio, you can "dial-out" some bad driving practice. Set your transmitter's throttle exponential (curve) to a negative value so that you have as much mid-range as possible. Now, in order to achieve full throttle, you'll have to make a conscious effort to pull the trigger all the way back.

Driving Error number 2 LACK OF STEERING

Understeer (push) is a common problem. But the fact is that the more steering your car has, the less stable it is. I went truck-racing with editor John "Doogie" Howell recently, and during a practice run, he complained that his truck didn't have enough steering. He handed me his transmitter so I could take a few laps. You know what? I found his truck to be so dialed-in and stable it wasn't even funny!

SOLUTION

Why was Doogie complaining? Because he doesn't like to practice one very important rule of driving: *slow down for the corners!* Doogie likes to "pin-it and pitch-it." You'd be surprised at how much steering your car will have if you plan early for corners by slowing down.

Throttle and brake control is everything when it comes to steering. Every car, suspension and set of tires has an optimum steering speed for each type of corner that will provide the quickest way through. If you try to go too fast through a corner, you'll most likely spin out, encounter severe push, or even flip over. If you go too slowly, you'll get run over by the other cars.

Try to find the best speed for each turn and stick to that speed by letting off the throttle early, or by learning to set and use your ESC's brakes properly. Most people tend to use too much brake; you don't want the rear tires to lock up during braking; rather, you just want to slow the car enough so that it corners quickly. By using brake properly, you'll be able to enter turns aggressively and still corner tightly and efficiently.

Driving Error number 3

POOR JUMPING

Have you ever driven over a jump, and found that your car either digs its nose into the dirt, lands on its motor plate, or does somersaults and cartwheels? Before you

start changing shock oil, springs, or pistons, try using different driving techniques to tackle hard jumps.

SOLUTION

Just as the throttle is used to control cornering, it's also used to control jumping. If your car

nose-dives off a jump, try letting off the throttle as you approach the jump then accelerating as you travel up the face and into the air. The rotating force of the spinning rear wheels actually helps to keep the nose of the car up. This technique also tends to compress the car's suspension and cause its chassis to drag on the jump. This *does* slow the car and limit its jumping distance, but it also helps the chassis stay nice and flat as it leaves the jump

Sometimes, a "nose-down" jumping technique is useful for clearing large doubles or for jumps that are immediately followed by sharp turns.



and takes to the air.

If your car jumps nose-high, all you have to do is tap the brakes while the car is in midair. It's amazing how well this works; when the rear wheels slow or stop spinning, the front of the car drops like a stone! Letting off the throttle as your car travels up the face of the jump will also help keep the car's nose from getting too high.

It's also important to make sure that your car's wheels don't spin as you drive up the face of a jump. Just as wheel-spin can cause problems on bumpy tracks, it can also cause your car to jump sideways or even roll over when it leaves the jump. Using a partial-throttle technique over jumps usually pro-

vides the best combination of stability and distance.

Remember that it's not always best to "sky" a jump. It may look really cool to jump higher and farther than everyone else (it's definitely more fun), but during a race, when efficiency and quick lap times are needed, you might want to tone it down a bit. The best rule here is that your car will usually be faster when its tires are in contact with the ground and it's being propelled, rather than when it's sailing through the air. The exception to this is if you can consistently jump large obstacles that would otherwise slow the car.

Try to lose the mindset that tuning your car will make it perfect. It's much



Jumping properly requires careful use of the throttle. Too much "gas," and your car or truck might not survive a crooked landing such as this.

more important to learn to drive the car better than to pursue that elusive ideal setup. If you do race, spend less time wrenching and more time driving, and you'll certainly be rewarded with faster lap times. A really good driver can win with a less-than-perfect car, but a poor driver can't win with even the fastest car. ■

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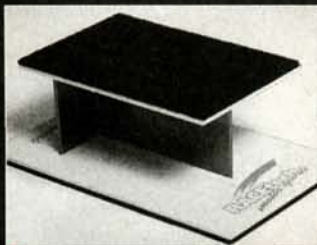
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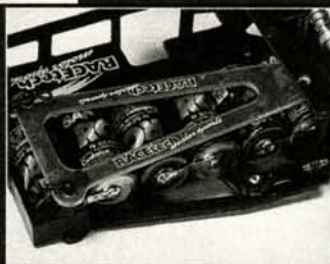
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Berry R/C Raceway, Main St., Berry, AL 35543; Ronny, Don, (205) 932-3189



Phenix Raceway & Hobby, 2006 Opelika Rd., Phenix City, AL 36867; Casey Hoover, (334) 297-0040


R/C Hi-Tech Raceway, 3303 Meridian St., Huntsville, AL 35811; Rick Chambers, (205) 539-1347.


R/C Super Cross, 2706 Lagoon Park Dr., Montgomery, AL 36109; Mike Gardner, (205) 262-0048


Spring Cove Speedway, Rt. 1, Box 95, Florence, AL 35630; Chuck or Lyda Syppitt, (205) 757-5998


Thunder Road International Speedway, 108 Park Rd., Pleasant Grove, AL 35127; Jim Kearney, (205) 744-0107


Thunder Road Speedway, 108 Park Rd., Pleasant Grove, AL 35127; Jim or Cheyenne Kearney, (205) 744-0107


ALASKA

ARCORA, 2812 Spenard Rd., Anchorage, AK 99503; Jim Rafuse, (907) 277-7778 (weekends only)


ARIZONA

Arizona Indoor Off-Road, 2141 S. Industrial Park Ave., Tempe, AZ 85282; Jerry Walter, (602) 966-8166


Cottonwood R/C 1307 Mingus, Cottonwood, AZ 86326; Ed's Hobbies, (602) 634-2275


Finish Line Raceway, 7025 E. 21st St., Tucson, AZ 85710; Jerry Kikkert, (602) 747-3633


Frank's Hobby House, 19401 N. Cave Creek Rd., Phoenix, AZ 85024; Marty, (602) 992-3495


G&S Raceway, 967 Hancock, Bullhead City, AZ 86442; Bob Olsen, (602) 758-1100


Havas R/C Raceway, 1400 S. Smoketree (Rotary Park), Lake Havasu, AZ 86403; Bonnie Coates, (602) 855-2966 or (602) 855-4666


High Desert Raceway 2570 Neal Ave., Kingman, AZ 86401; Bryce Cole, (520) 757-4498



The Hobby House, 508 E. 22nd St., Yuma, AZ 85364; Harold, (602) 782-9644


HobbyTown Mountain Raceway, 4431 S. White Mountain Rd., Showlow, AZ 85901; Dennis, (602) 537-9373



HobbyTown Raceway, 9180 E. Indian Bend Rd., Scottsdale, AZ 85250; Dennis, (602) 948-3946


HobbyTown Raceway, 1915 East Baseline Rd., Gilbert, AZ 95234; Kenny, (602) 892-0405



Hobbytown Raceway, 2814 W. Bell Rd., Phoenix, AZ 85023; Mike Kaminski, (602) 993-0122


Quarter Flash's Squirtn' Dirt Raceway, 16301 S. Santa Rita #C, Sahuarita, AZ 85629; Dave or Randy, (602) 625-9274


R/C Motorplex, 204 Best Industry Dr., Jonesboro, AZ 72401; David Hill or Kevin Brady, (501) 931-3278



R/C Sports Mania, 3550 N. 35th Ave., Phoenix, AZ 85017; Brian Dick, (602) 278-3671



Scottsdale R/C Raceway, 3023 N. Scottsdale, Scottsdale, AZ 85251; Mike Dolan, (602) 829-9117


Speedway Hobbies, 1000 N. Humphreys St., #204, Flagstaff, AZ 86001; Gary McAllister, (602) 556-0710


ARKANSAS


Arkansas Int'l. Superspeedway, P.O. Box 1636, Pine Bluff, AR 71613; Joe Pitts, (501) 247-2371


Performance Hobbies, 2222 Spence, Jonesboro, AR 72401; Rick Winningham, (501) 935-6501


Sparks R.C. Raceway, 7194 Greene 721 Rd., Paragould, AR 72450; Tommy or Daniel Sparks, (501) 239-3606



Tri State R/C, 415 N. 4th, Fort Smith, AR 72901; Robbie Langely, (501) 783-4038 or (501) 452-7783


CALIFORNIA

Cameron Park Raceway, 1305 Cameron Ave., West Covina, CA 91790; Carl A. McVey, (818) 962-1120



Cats West/Hawk's R/C Raceway, 1201 West 10th St., Antioch, CA 94509; Jerry Winkelbaver, (510) 779-1665


Chico's 20th Street Raceway, 236A W. East Ave., Chico, CA 95926; David Brown, (916) 893-6443


City Speedway, 7750 Convoy Ct., San Diego, CA 92111; (619) 560-9633


Cloverdale R/C Raceway, 1 Citrus Fair Dr., Cloverdale, CA 95425; Tom Kelley, (707) 586-9789; track, (707) 894-4468



D&D Raceway, 290 S. 1st Street, Turlock, CA 95380; Dave Miller or Lee Cisco, (209) 667-0907


Fast Lane, 25845 San Fernando Rd., #21, Saugus, CA 91350; (805) 255-2404


Greater Los Angeles R/C Racing Club, California State University, Parking Lot A, Los Angeles, CA 90045; Glenn Williams, (213) 734-7888 or Tom Wong, (310) 821-5472


Hobbies Emporium, 1324 Vendels Cir., #111, Paso Robles, CA 93446; Rick Powers, (805) 239-0408



Hobby Haven Raceway, 3983 First St., Livermore, CA 94550; Tom Welding Jr., (510) 443-5828


Hobby Tech, 7932 Miramar Rd., San Diego, CA 92126; Henry Molier, (619) 586-1701


Hobby Warehouse, 5500 So. Watt, Sacramento, CA 95828; Roger Hubbard, (916) 381-7587


Jake's Performance Hobbies, 6650 Commerce Blvd., #21, Rohnert Park, CA 94928; Jake, (707) 586-3375


JC High Desert Raceway, Gorgonio Rd., Phelan, CA 92329; JC Fletcher, (619) 868-4834


JD Hobbies, 1009 W. College Ave., Santa Rosa, CA 95401; Mike, (707) 571-1700


K&M R/C Raceway, 22474 A Barton Rd., Grand Terrace, CA 92324; Mike Blake, (714) 783-0899


KW Raceway, 5630 Ager Rd., Montague, CA 96064; Keith Wilson, (916) 459-3787



Lodi's Radio Control Speedway, 1033 Black Diamond, Ste. B, Lodi, CA 95240; Mike Belanger, (209) 334-5681



Lucerne Valley Raceway, 32800 Old Woman Springs Rd., #4, P.O. Box 2047, Lucerne Valley, CA 92356; Frank Rodriguez, (619) 248-7305


M n M Hobbies, 137 N. Vander, Verona, CA 91720; Joe Stanovich, (909) 272-3545


Outlaw Hobbies, 7920 Webster, Highland, CA 92346; Rick James, (909) 884-1770



Perris Recreation R/C Track, 120 N. Perris Blvd., Perris, CA 92370; (909) 943-6803


R/C Off-Road Raceway, 10810 Talbert Ave., Fountain Valley, CA 92708; Jeff Paul or Bob Fiege, (714) 965-9615


R/C Racing Center and Hobbies, 9842 Channel Rd., Lakeside, CA 92040 (San Diego County); Russ or Cindy Escalera, (619) 443-2270



R/C Sports, 759 E. Monte Vista Ave., Vacaville, CA 95688; (707) 446-5555



Race Prep Raceway, 20115 Nordhoff, Chatsworth, CA 91311; Steve Dunn, (818) 709-6800



RAMS, Murco Plaza, Paseo Padre Pkwy. & Mowry East, Fremont, CA; Mike Alton, (510) 490-8734


RCRC Hobbies, 2069 Pacific Coast Hwy., Lomita, CA 90717; Rhea & Cliff Fisher, (310) 530-7272



Revelation Raceway, 4871 State St., Montclair, CA 91962; Tim Bump, (909) 464-8247



Rickey Racers, 14568 Arrow Hwy., Fontana, CA 92335; (909) 822-0226


R.R.W., 1844 W. Glenoaks Blvd., Glendale, CA 92335; Steve Davenport, (818) 240-2093


San Francisco Radio Controlled Model Car Club, 3136A Turk St., San Francisco, CA 94118; Randy Swan, (415) 221-1978


So. Cal R/C Raceway, 11930 Valley View St., Garden Grove, CA 92645; Jim Blauvelt, (714) 892-0088


SRS Raceway, 915 N. Main St., Salinas, CA; (408) 424-4044


Team Air Racing Club, 18208 Imperial Hwy., Yorba Linda, CA 92686; Don or Nicky, (714) 579-7488


Valley R/C Racepark, 146 S. Santa Fe St., Hemet, CA 92344; Valley Wide Recreation, (909) 654-1505 or 658-4322.



Ventura Roadrunners Freedom Park Raceway, 617 N. Las Posas Rd., #107, Camarillo, CA 93010; Les Abramson, (805) 887-2901


Wendy's Country Store and More/O.R.C.A. Racing Club, 5475 Skyway, Paradise, CA 95969; Alan Evans, (916) 872-9363


COLORADO


Miracle R/C Speedway, 4206 Wadsworth Blvd., Wheatridge, CO 80034; Rob Brossman, (303) 420-3051



R/C Mini Sports, 6401 Broadway, Unit G, Denver, CO 80223; John Weins, (303) 426-0110



S&T R/C Raceway, 323 Auburn Dr., Colorado Springs, CO 80909; Tim Bishop, (719) 574-2910


CONNECTICUT


CT R/C Off-Roaders, behind Old Field School, Fairfield, CT 06430; Mike Belmonte, (203) 661-0145


E.A.R.T.H., 2380 Main St., Rocky Hill, CT 06067; Ziggy Kwansnicki, (203) 529-0018


JP's R/C Hobbies, 200 S. Main St., Seymour, CT 06483; Jim Petzold, (203) 888-4849



K/N R/C Speedway Inc., West St., Stafford Springs, CT 06076; (203) 684-9896


Little Bristol Speedway, 302 Rt. 39, New Fairfield, CT 06776; Dale Cote, (203) 355-4028



NERCAR, 36 Glendale Rd., Enfield, CT 06082; Phil Olsson, (203) 627-5410



R/C Madness, 640 Enfield St., P.O. Box 64, Enfield, CT 06082; Christopher Marcy, (203) 741-6501


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B+T R/C Central, 811 Playground Rd., Ft. Walton Beach, FL 32547; (904) 863-1666


Brantford R/C Speedway, Rt. 3, Box 240, Brantford, FL 32008; (904) 935-0758


Broward County R/C Race Club, Mills Pond Park, Ft. Lauderdale, FL; Ed Augusto, (305) 525-3304



Challenger Sedway at the Willows, Willows Park & Okeechobee Blvd., Royal Palm Beach, FL 33414, Walt (407) 965-2790, or Mark (407) 790-6917


Coral Springs Roadrunners, P.O. Box 9632, Coral Springs, FL 33075; Randy Witte, (305) 474-5934 or Rick Schwartz, (305) 344-1983



First Coast Speedway, 6410 Waltho Dr., Jacksonville, FL 32211; Bob Thompson, (904) 743-2161


5-Fifty-5 R/C Raceway, State Road 555, Bartow, FL 33830; Chuck Nolke, (813) 324-7406


Greater Orlando Auto Racers, 970 Keller Rd., Altamonte Springs, FL 32714; Dave Mottin, (407) 263-4819



Hobby World Raceway, 7273 103rd St., Jacksonville, FL; Ray or Greg, (904) 772-9022



Lake Whipoorwill International Speedway, 12345 Narcoossee Rd., Orlando, FL 32827; Bob Hosch, (407) 277-9586; fax (407) 277-2568


Louie Burton's R/C Raceway, 4215 Mustang Rd., Lakeland, FL 33803; Louie Burton, (813) 665-1322


Morris Kohl Ent., 1107 W. Waters Ave., Tampa, FL 33604; Morris Kohl, (813) 931-1626


My Rose, 1695 W. Indiantown Rd., Jupiter, FL 33458; Mark Watson, (407) 744-3800



NORRA, 3300 Santa Barbara Blvd., Naples, FL 33942; Jerry Pecar, (813) 592-7562 or Mark Benfield, (813) 263-6861


Ocala Radio Control Car Club, 3500 SE 30th Terrace, Ocala, FL 34471; Steve Shook, (904) 694-5147



Paul's Stadium Raceway, 4511 W. Dr. M.L. King Jr. Blvd., Tampa, FL 33614; Paul Surette, (813) 872-8662


PBG R/C Motor Park, 6351 Barbara St., Palm Beach Gardens, FL 33410; Doug Gleason, (407) 743-9791


Pro Hobbies Speedway, 715 N. Lake Pleasant Rd., Apopka, FL 32712; (407) 886-4615


Red's R/C Raceway & Hobbies, Etc., 1010 Creighton Rd., Pensacola, FL 32504; Linda Till, (904) 479-2330


River City R/C Car Club, 9711 Sharing Cross Dr., Jacksonville, FL 32257; Bill Fraden, (904) 268-1948


Southwest Florida R/C Raceway, 2425 Rivers Rd., Naples, FL 33964; Clyde Armstrong, (813) 455-1143


Tampa Bay R/C Club, P.O. Box 10224, St. Petersburg, FL 33733; Dick Gillette, (813) 526-0744


Three Flags R/C Racetrack, 1755 East S.R. 44, Wildwood, FL 34785; Don Meares Sr., (904) 748-3870; fax (904) 748-5263


Treasure Coast R/C Club, 4931
Oleander, Fort Pierce, FL 34982; Lou,
(407) 464-3207

WINTERSET RACEWAY

5272 U.S. 27
South, Sebring, FL 33870; Mack
Mixer, (941) 385-2452

WEST COAST R/C CLUB

Lake Park,
17203 N. Dale Mabry, Tampa, FL
33549; Alex, (813) 920-7448; Bert,
(813) 654-2554

GEORGIA

Carnesville R/C Speedway, Hwy. 145
S., Carnesville, GA 30521; Bill or
Georgia Austin, (706) 335-9044 or
335-3381

CHALEE PARK RACEWAY

1800 Pearl
Ave., Augusta, GA 30904; Darren
Brooks, (706) 738-6929

DALTON RACEWAY

2300 Chattanooga
Rd., Dalton, GA 30720; (404) 226-6699

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Thompson/Cliff Kline, (912) 788-8731

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Rt. 1, Box
1071, Hwy 51, Royston, GA 30662;
Morris Phillips or Wayne Fowler, (706)
245-9573

SHILOH R/C RACEWAY

6362 Shiloh
Rd., Hahira, GA 31632; Doug Burnett,
(912) 794-2507

SILVER WINGS RACEWAY

5611
Riverdale Rd., College Park, GA
30349; M. Bradshaw, (404) 991-2225

SUGAR BOWL R/C SPEEDWAY

5272
North Ave., Sugar Hill, GA 30518;
Shelley or Jan Bailey, (404) 945-6709

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Garden Isle R/C Racers, P.O. Box
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(808) 246-8856

MAUI R/C RACING ASSOCIATION

430
Hookahi St., #13, Wailuku, HI 96793;
Tritsch R/C Hobbies, (808) 244-0526

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Capital Dirt Burners, 1945 N. Teare
Ave., Meridian, ID 83642; Jim
Brandon, (208) 888-7079

Falls Hobbies & R/C Raceway, 1515
Northgate Mile, Idaho Falls, ID 83401;
(208) 529-8650

ILLINOIS

Ameri-Trac, RR 3, Box 242; Mattoon,
IL 61938; Ben or Judy Giles, (217)
235-6873

AJ's Raceway, Kesslinger Road,
DeKalb, IL 60115; A.J. Schultz, (815)
756-2772

BARR, 809 River Dr., Byron, IL 61010;
Jim Haynes, (815) 234-5615

B.G. R/C Racing & Hobbies, 56 E.
Ferguson, Wood River, IL 62095; Ben
or Judy Giles, (618) 254-6301

C&R Hobbies, 39 E. Jones, Milford, IL
60953; Ray Craighead, (815) 889-
4073

Cedarville R/C Speedway, 430 W.
Washington, Cedarville, IL 61013;
Troy Pokoj, (815) 745-2885

Central Illinois Max Track, 1013 Iowa
St., Ashmore, IL 61912; Josh Carter,
(217) 349-8824

Diehard R/C Raceway, 300 N. Main,
Kewanee, IL 61443; Dick Jennings,
(309) 852-3700

Hobby Town Raceway, 4611 W. Rt.
120, McHenry, IL 60050; Mike
Hollingsworth, (815) 344-1777

Leisure Hours R/C Raceway, 24121
W. Theodore, Bldg. 1, Plainfield, IL
60544; Scott Hill, (815) 439-1777
(track), (815) 439-1477 (shop)

Machesney Park, 1220 Shappert Dr.,
Machesney Park, IL 61115; (815) 282-
1311

Marty's R/C Hobby, 1335 E.
Broadway, Bradley, IL 60915; Gail or
Marty, (815) 933-8441

Mitey Motor Speedway, 1109 N.
Bloomington St., Rte. 23., Streator, IL
61364; Doug, (815) 672-4212

Monroe R/C Raceway, 26049
Ridgeland Ave., Monroeville, IL 60449; Roy
or Roberta Moody, (708) 534-2422
(track), (708) 799-5597

Peoria R/C Raceway, 518 Hillsdale
Ave., Peoria, IL 61604; Ray Tighe,
(309) 672-1760

R/C Workshop, 3100 S.W. Adams St.,
Peoria, IL 61605; Al Kretz, (309) 673-
4860

Racing Time, 6012 S. Archer,
Chicago, IL 60632; Brad or Gino,
(312) 767-0773

Radio-Active Raceway, 751 N.
Bolingbrook Dr., #15, Bolingbrook, IL
60440; Jim, (708) 759-7557

Redline Raceway, 921 Harding,
Calumet City, IL 60409; (708) 862-8181

Shiloh Eagles Superspeedway, 308
N. Virginia Ave., Belleville, IL 62220;
(618) 277-6030

SIRCAR Raceway, 1200 N. Marion,
Carbondale, IL 62901; (618) 549-5885

Slot and Wing Hobbies "Race
Place", 1615 W. Springfield,
Champaign, IL 61821; (217) 359-1920

Stanton Hobby Shop Inc., 4718 N.
Milwaukee, Chicago, IL 60630; Tim
Copeland, (312) 283-6446

Superior Raceway, 1706 W. Bradley,
Champaign, IL 61821; (217) 359-8073

Super Stock Speedway, 54
Bonnenstiehl Rd., Collinsville, IL
62234; Thomas Smith, (618) 632-
2615

Valley Farms R/C Raceway, 706
Bypass 20, Cherry Valley, IL 61016;
Dean or Debbie, (815) 332-4516 or
(815) 547-5884

Wayne's World Raceway, R.R. 1 Box
246A, Danville, IL 61832; Wayne
Henk, (217) 446-3419

INDIANA

Autograce/Race World, 231
Pendleton Ave., Pendleton, IN 46064;
Sam Mudd, (317) 778-3386

Dave's ATVs, Hobbies & Raceway,
3035 English Ave., Indianapolis, IN
46201; Dave Sutton, (317) 767-9641

Elliott's R/C Raceway, 2140 North
Plate, Kokomo, IN 46901; (317) 452-
0163

Hobby Barn Raceway, 1950
Springhill, Terre Haute, IN 47802-
9694; (812) 299-5773

K&L Hobbies & Raceway, 3275 North
525W, LaPorte, IN 46350; (219) 324-
0353

Kokomo Hobby & Radio Raceway,
1108 E. Markland, Kokomo, IN 46901;
(317) 457-5060

Main Hobbies, 625 Columbia,
Lafayette, IN 47901; Randy Palmer,
(317) 742-2045

Maple City Speedway, 1651 W.
Franklin St., Elkhart, IN 46516; Pete
Russell, (219) 293-1827

P&T Hobbies and Raceway, RR 2
(Hwy. 60), Mitchell, IN 47446; Paul
Weber or Tom Logsdon, (812) 849-
6666, fax (812) 332-0018

RC Barn, 310 N. 125 W. Monroe, IN
46772; Mark Lengerich, (219) 692-6600

R/C World of Indiana, RR #2, Box
335, Lynn, IN 47355; (317) 874-2464

Racer's Choice Raceway, State Rd.
256, Jefferson Co. 4-H Fairgrounds,
Madison, IN 47250; Eric Burns, (812)
866-5521

Rimfire Raceway and Hobby Shop, 8
Wood Ct., Hebron, IN 46341; Sandra
Eaton, (219) 996-6288 (shop), 987-
2803 (home)

The Rink, 7900 Whitcomb,
Merrillville, IN 46410; Don Reiner,
(219) 769-8113

Dubuque R/C Speedway, Dubuque
County Fairgrounds, Dubuque, IA
52001; Paul Conlon, (319) 556-2736

Hobby Haven, 7672 Hickman Rd., Des
Moines, IA 50322; Jim, (515) 276-
8785

M&M Racetrack, 2434 Pilgrim Path,
Oskaloosa, IA 52577; (515) 673-6265

Manly R/C Club, Box 23 (Hwy 65),
Greene, IA 50456; Bruce Hill, (515)
454-2025

MAINE

Central Maine R/C Speedway and
Hobbies, 18 Lithgow St., Winslow,
ME 04901; David Prescott, (207)
877-2232

Clay Bowl R/C Hobbies, P.O. Box 61,
Greene, ME 04236; Pat Cap, (207)
946-5003

Mementos Hobby Shop, 86 Sweden St.,
Caribou, ME 04736; (207) 498-3711

MARYLAND

Cockeysville Astrodome Racers,
10854 York Rd. (rear), Cockeysville, MD
21030; Steve Balaz, (410) 666-2521

Doug's Raceway, 2935 Crain Hwy.,
Waldorf, MD 20601; Doug Moran, Jr.
(301) 843-6220

Hobby Hut, 7014 B. German Hill,
Dundalk, MD 21224; Joe Lamb, (410)
288-5662

Hobbyworld, 8220 Ritchie Hwy.,
Pasadena, MD 21122; Bill Henschen,
(410) 544-8782

J.R.'s Race Place, 3649 Gelston Dr.,
Baltimore, MD 21229; James Radford,
(410) 947-2766

The Track, 16806 Oakmont Ave.,
Gaithersburg, MD 20877; Mimi Wong,
(301) 417-9630

Woffland Hobbies and Raceway,
2072 Crain Hwy., Waldorf, MD 20601;
Perry Pritchard, (301) 870-0293

MASSACHUSETTS

Centerline Hobbies, 167 Corporation
Rd., Hyannis, MA 02601; (508) 771-1244

East Templeton Model Raceway, N.
Main St., East Templeton, MA; Keith
Anderson, (508) 249-4771

Hi-Tech Hobbies, 1681 Broadway (Rt.
138), Raynham, MA 02767; Ruben,
(508) 880-5373

Megadrome Raceway, Rt. 8, Curran
Hwy, North Adams, MA 01247; Bob
Blanchette, (413) 743-7223

New England R/C Headquarters, 33 Fr.
Devalles Blvd., Fall River, MA 02721;
Chuck Gregory, (508) 673-8069

North East Auto Racers, 4 Graf Rd.,
Newburyport, MA 01882; Dave
Thibault, (508) 699-9587

R/C Hobbies & Speedway, 16 Rio
Way, Fairhaven, MA 02719; Toni or
Roy, (508) 991-5040

Speedworld Hobbies, 134 Water S.,
Wakfield, MA 01880, (617) 245-3922

West Street Hobbies, 114C Main St.,
Weymouth, MA 02093; Jim, (508) 533-1231

MICHIGAN

Akright Outback Racing, 984 Zimmer
Rd., Williamston, MI 48895; Steve
Akright, (517) 655-4531

Capital Area Racing Society, The
Plumbers Hall, 5405 S. Logan, Lansing,
MI; Dave Halsey or Brad Smith, (517)
646-8224 or (517) 484-4028

Can-Am Hobbies Speedway Park,
1152 Gratiot, Marysville, MI 48040;
Don Grinde, (313) 364-3338

Chatter Box Racing, P.O. Box 164, Old
State Rd., Central Lake, MI 49622; Bill
Altergott, (616) 544-9829

Doug's Dirtway, 5210 Colby Rd.,
Owosso, MI 48867; Doug Conn, (517)
723-3368

JJ's R/C Speedshop, 5713 13 Mile
Rd. (corner of 13 and Mound),
Warren, MI 48092; (810) 977-0420;
fax (810) 977-7290

JT Hobby and Speedway, 825 Golden
Ave., Battle Creek, MI 49015; Jerry or
Dan, (616) 965-0571


Ludington R/C Raceway, 1483 N.
Dennis Rd., Ludington, MI 49431;
(616) 843-4654

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PRO-LINE TRACK DIRECTORY

MCRC Raceway, 4601 Page Ave., Michigan Center, MI 49023; Sam Sprang, (517) 787-9161


Newberry R/C Raceway, RR 3 Box 2860, McMillan, MI 49853; Dustin Hart, (906) 293-3044



Pointe R/C, 2119 Summerton Rd., Mt. Pleasant, MI 48858; (517) 773-5711



R&L Hobbies, 9782 Portage Rd., Kalamazoo, MI 49002; Rex Simpson, (616) 323-3686; fax (616) 329-1744


Rainbow Gardens, 600 North Shore Ave., Crystal, MI 48818; Mike or Sandy, (517) 235-4298



Rider's Super Speedway, 42040 Kopperwick Rd., Canton, MI 48187; Brent Martin, (313) 981-8700 or (313) 451-5599


Scale Racing Center, 3432 Highland Rd., Waterford, MI 48328; Larry Rossi, (810) 683-5529


T/A Raceway, 119 N. Michigan, Big Rapids, MI 49307; Harvey, (616) 796-3217


Vicksburg Off-Road R/C Raceway, 50201 Silver St., Vicksburg, MI 49097; Jeff Schroeder, (616) 375-8591


Village Hobbies-n-Crafts, 195 N. Elm, Hesperia, MI 49421; Alan or Fran, (616) 854-1374



Westside R/C Raceway, 4335 Lake Michigan Dr., Grand Rapids, MI 49504; George Orlowski, (616) 791-9902. (Open May through August)


MINNESOTA


Badger R/C Raceway, 404 Tamarack St., Box 101, Badger, MN 56714; Keith Cumming, (218) 386-2001


C/S Speedway, 312 N. Bdwy, Crookston, MN 56716; Caesar Kaiser, (218) 281-6665


Grand Rapids R/C Speedway, 2209 Hwy 2 East, Grand Rapids, MN 55744; Aaron Voges, (218) 326-6751


Greater Minnesota Racin' Place, 3302 Southway Dr., St. Cloud, MN 56301; Jon Jackson, (612) 252-9768


Larry's Raceway Park, 105 3rd Ave. NE, Glenwood, MN 56334; Dan Winter, (612) 634-5246



Minn-E-Golf & Hobby, 9100 Park Ave., Elk River, MN 55330; (612) 441-8365


Paul Bunyan Raceway, Rte. 1, Box 468, Bemidji, MN 56664; Brad Trask, (218) 243-2749



Range Racing World R/C Speedway, 412 Jones St., Eveleth, MN 55734; Bill, (218) 744-4423


Southside Speedway, 2241 Marion Rd., SE, Rochester, MN 55904; Kevin Guy, (507) 281-3233


Trackside Racing, 2300 Myrtle Ave., St. Paul, MN 55114; Winton Ortelie, (612) 644-3424



Wild West R/C Speedway, 2822 Piedmont Ave., Duluth, MN 55811; Roger Deloach, (218) 727-6248


MISSISSIPPI


Crossroads Raceway, 904 Cass St., Corinth, MS 38838; Ronnie Inman, (601) 287-7169


Fast Freddy's Raceway, 20390 Hwy. 49, Saucier, MS 39574; Mark Payne, (601) 832-0315


Joe McFadden Hobbies, 1619 51st Ave., Meridian, MS 39307; Joe McFadden, (601) 483-7000



Rural Hill Raceway, 2535 Tabernacle Rd., Columbus, MS 39702; Jeffrey Alvey, (601) 328-9429


Small Cars Unlimited, 820 Cooper Rd., Jackson, MS 39212; (601) 372-FAST



Wheeler R/C Raceway, Rt. 4, Box 569A, Booneville, MS 38829; Doug Holt, (601) 365-3439 or (601) 842-5275


MISSOURI

All Seasons Hobby, 152 O'Fallon Plaza, O'Fallon, MO 63366; Bob Daniels, (314) 281-8767


ARC Raceway, 109 South High St., Jackson, MO 63755; Burt, (314) 243-1371



B&L Hobbies & Raceway, 2800 Anchor Dr., Park Hills, MO 63061; Bob Marler, (314) 431-9444


Blue Vue Speedway, 12019 E. 47th St., Kansas City, MO 64133; Mark Randol, (816) 358-0238


Columbia R/C Trax, 1502 W. Bus Loop 70 (Exit 125), Columbia, MO 65202; Gary Phillippe, (314) 682-3993



Extreme Edge Speedway, 119 W. Liberty St., Farmington, MO 63640; Ken Boren, (314) 756-4122


Fast Trax Racing Assoc., mailing: 206 N. Water, Nixa, MO 65714; track: 318 Boonville, Springfield, MO 65082; Juan Monteli, (417) 725-4337


K.C. R/C Speedway, 11426 N. Walnut, Kansas City, MO 64155; Justin Baugh, (816) 436-3638


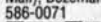
Lafayette Riverside Raceway, P.O. Box 9663, Marshall Rd., Kirkwood, MO 63122; Don Laningham, (314) 966-8912


Mid-Mo R/C Raceway, 400 W. 2nd., Sedalia, MO 65301; (816) 826-5113


Ozark's R/C Raceway, Hwy 13, Brighton, MO 65781; Gene Rhodes, (417) 742-4376 or Ron Hawkins, P.O. Box 460, Willard, MO 65781, (417) 742-2561


Suppenbach Winter Racing, Route 5, Box 66, Pleasant Hill, MO 64080; Larry Suppenbach, (816) 987-5828


MONTANA

Bozeman R/C Powerhouse Track, 2825 W. Main (west side of Main Mall), Bozeman, MT 59715; (406) 586-0071



Garden City R/C Raceway, 11885 1/2 Highway 93., Lolo, MT 59847; Doug Phillips, (406) 549-3891 or (406) 728-8029


Stormer Raceway & Slot Motorplex, P.O. Box 126 Hwy 2 East, Glasgow, MT 59230; (406) 228-4569


NEBRASKA

Mr. Bill's, 450 West 2nd St., Hastings, NE 68901; Bill J. Ries, (402) 462-4865



River City Racing, Aksarben Field, Sales Pavilion, Omaha, NE 68164; Robert Conner, (402) 431-0482


The Salvation Army, 4032 Harrison St., Omaha, NE 68147-1012; Lt. Michael Delashmitt, (402) 634-3414


Wild Card Raceway, RR1 Box 137, Columbus, NE 68601; Roger F. Miller, (402) 564-7743


NEVADA

Radio Controlled Race World, 905 So. Rock Blvd., Sparks, NV 89431; James or Barbara Balough, (702) 356-2882


Silverbowl Speedway, 7274 Hardtack Cir., Las Vegas, NV 89119; Mike, (702) 896-3577


Western R/C Raceway, 6404 Richmar, Las Vegas, NV 89139; Randy Grigg, (702) 897-7227



NEW HAMPSHIRE


Economy R/C Speedway, 4 Maple St., Winchester, NH 03470; Harold Thomas, (603) 239-4482 or 239-6470


Fastracker Club, 520 Washington St., Keene, NH 03431; Bill Phillips or John O'Connor, (603) 352-0811 or 357-8393


Hobby Etc., Heritage Place, Rt. 101A, Amherst, NH 03031; (603) 595-8549



Lake Region R/C Speedway, Lily Pond Rd., Laconia, NH 03246; Louie Blais, (603) 524-2909


Outback Raceway, East Washington Rd., P.O. Box 508, Bradford, NH 03221; Jim or Bill Thompson, (603) 938-2425



Robert's Railroad & Hobbies, Box 431, Rt. 4 at Rt. 152, Northwood, NH 03261; Robert Jeffers, (603) 942-5193


NEW JERSEY


Bob's American Raceway, 142 Wilson Ave., Englishtown, NJ 07726; Bob Morrisco, (908) 446-3737


Family Hobbies Raceway, 3576 N.W. Blvd., Weymouth Rd., Vineland, NJ 08360; Linda Vogel, (609) 696-5790



Golden Hobbies Raceway, 415 Erial Rd., Pine Hill, NJ 08021; John or Iona Golden, (609) 782-1222



Hobby Shop Speedway, 23 State Hwy NJ 08822; Patrick Clark or Eric Lee, (908) 806-7244 or (609) 737-1224



Jefferson Speedway, 5494 Berkshire Valley Rd., Oak Ridge, NJ 07438; (201) 697-7525



LBRA Track, 392 Warburton Pl., Long Branch, NJ 07740; (908) 222-5122


Millville R/C Oval, 114 N. High St., Millville, NJ 08332; William Denstoz, (609) 327-4640



Phil's Truck and Track R/C Shop, 2063 South Rte. 130, Florence, NJ 08518; Phillip Huseinitza, (609) 499-0002


Pit Stop Dragway, Campus Rd., Totowa, NJ 07512; Kimberly Frank, (201) 956-8492 (7223)



The Race Place, 1151 Hwy. 33, Farmingdale, NJ 07731; John Fary, (908) 938-5215


Spennell Speedway, 2301 Rte. 9 North, Great American Flea Market, Howell, NJ 07731; Mitch, (908) 577-9191


On Trax Hobbies, 1549 Rte. 70, Browns Mills, NJ 08015; Joseph DiGirolamo, (609) 735-0422



Zeppelin Hobbies, 92 Rt. 23N, Riverdale, NJ 07457; Lou Ballini, (201) 831-7717


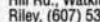
NEW MEXICO

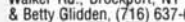
Las Cruces R/C, 3110 Hillsdale, Las Cruces, NM 88005; Bob Risner, (505) 523-1962


Meerschmidt R/C Raceway Park, Walnut and Hadley, Meerschmidt Park, Las Cruces, NM 88001; Wayne Ward, 2230 Coleen Ct., (505) 523-4863, (505) 326-1758

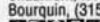

NEW YORK

Back Woods Off-Roaders Club, 21 Arlington Ct., Montrose, NY 10548; Jeff Jacoby or Paul Eichengrun, (914) 737-2252



Beach Hill Speedway, 1760 Beach Hill Rd., Watkins Glen, NY 14891; Jim Riley, (607) 535-2616


Brookport Speedway, 6000 Sweden Walker Rd., Brookport, NY 14420; Gil & Betty Glidden, (716) 637-6224


Brownie's Pro & Sport Hobbies, 124 Bennett St., Staten Island, NY 10302-1426; John Brown, (718) 727-2194



C&D Raceway, 12542 NYS Rte. 12E, Chaumont, NY 13622; Chris or Don Bourquin, (315) 649-5403



Capital District R/C Racers, 27 Venus Dr., Albany, NY 12205; Keith Green, (518) 783-7859


Central New York R/C Auto Racers, Martin St., P.O. Box 116, Rome, NY 13440; John Orr, (315) 338-5140


Chippmunk Hill R/C Speedway, 217 Pine St., Theresa, NY 13691; Ted or Pete House, (315) 628-5065



Competition Hobby Supplies, 1006 Loudon Rd., Rte. 9, Latham, NY; (518) 786-3622


East Coast Barn Stormers, MD #1 Old Oxford Rd., Chester, NY 10918; Michael or Lou, (914) 469-8206


East End Off-Roaders, 7335 Main Rd., Mattituck, NY 11952; Wally, (516) 298-2020



Hal's Hobby Shop, 120 Cayuga St., Fulton, NY 13068; Hal & April Halstead, (315) 598-2772



Jerry's Raceway, 111 S. Applegate Rd., Ithaca, NY 14850; Jerry and Lori Achilles, (607) 277-0940



LI 1/4-Scale Racers, 63 Horton Dr., Huntington Station, NY 11746; (516) 351-5384


The Model Shop, 1 Lakewood Ave., Monticello, NY 12701; Richard Cimino, (914) 791-6075



National Hobby Supply, 25 1/2 Webb Rd., Middletown, NY 10940; Bruce Roosa, (914) 342-6786



1/8 Raceway and Hobbies, 168 Broad Hollow, Farmingdale, NY 11735; George or Dora, (516) 845-7223



Performance Hobbies Raceway, 205 North Ave., Webster, NY 14580; Anthony Cenzi, (716) 621-1274



Performance Plus Radio Control Speedway/The Hobby House, 1141 1/2 Jones & Gifford Ave., Jamestown, NY 14701; (716) 488-1772



Peter's R/C Raceway, Rte. 36, Leicester, NY 14481; P. Gerald Scorsone, (716) 382-3126



P.R.O. Speedway, 5 Washington St., Cattaraugus, NY 14719; Marc Pritchard, (716) 257-3101


R/C Competition Corner, K-Mart Plaza, Mattdale, NY 13211; (315) 455-8718


R/C Hobbies, Rt. 49, Box 138, Constantia, NY 13044; Roy Catholici, (315) 623-9536



R/C World, 69-57 Juniper Blvd., Queens, NY 11379; Norm, (718) 326-0002


R&S Hobbies, 356 Macedon Ct. Rd., Fairport, NY 14502; (716) 425-3722


Rampage R/C, 27 Fuller Ln., Hyde Park, NY; Brian Walker, (914) 229-2456


Ransomville R/C Raceway, 2576 Academy St., Ransomville, NY 14131; Irene Preisch, (716) 791-8310


Schoharie Co. R/C Car Club, P.O. Box 126, Cobleskill, NY 12043; (518) 234-4600



Small Torque Racers of Long Island, 24 Horton Rd., Huntington Station, NY 11746; George Franz, (516) 271-1119



Speedworld R/C Raceway, Rte. 12, Chenango Forks, NY 13746; Mike Magnusson, (607) 648-2063



South Shore Hobby & Raceway, W. Roe Blvd., Patchogue, NY 11772; Don Hauck, (516) 758-5567


Transit Speedway & Hobbies, 5319 Transit Rd., Depew, NY 14043; (716) 684-7368



NORTH CAROLINA

The Antique Barn, 2610 Forest Hills Rd., Wilson, NC 27893; (919) 237-6778



Badin Shore Raceway, 1730 Jackson Lake Rd., High Point, NC 27283; Jimmy or Tim Martin, (910) 431-6407


C/C Hobby Speedway, 8358 U.S. Hwy. 220 Bus. N., Randleman, NC 27317; Steve & Mary Cox, (910) 495-3482


C&H Raceway, 1400 N. Cannon Blvd., Kannapolis, NC 28083; Camera & Hobby Shop, (704) 933-5321



Cape Fear Speedway, 207 Harley Rd., Wilmington, NC 28401; Bob Justice, (919) 762-1184


Carolina Dragway, 907-D Warsaw Rd., Clinton, NC 28326; (910) 592-4569


Carolina Hobbies R/C Raceway, Route 1, Box 158, Taylorsville, NC 28681; Kim & Roseanne Kulawik, (704) 495-4040



Carolina Motorsports, 1517 Blandwood Dr., High Point, NC 27360; (910) 885-3713



Clapp's R/C Motor Speedway, Rt. 4, Box 300A, Siler City, NC 27344; Al Clapp, (919) 663-3198


Clinton R/C Raceway, 907-C Warsaw Rd., Clinton, NC 28326; Corbitt Marshburn (919) 592-9489


Creedmor R/C Super Speedway, 1781 Highway 15, Creedmor, NC 27522; Dan Cress, (919) 528-1546


Hobbies, Etc., 5540 Atlantic Springs, Raleigh, NC 27604; Don Asplen, (919) 790-1444


Hobby Park Dragway, W. Clemmons Rd., Winston-Salem, NC; Jack Wright, (919) 983-9416



Hobby Park, W. Clemmons Rd., Winston-Salem, NC 27103; Dick Butler, Parks & Recreation, (919) 727-2063



Mine Hole Gap R/C Raceway, 1297 Charlotte Hwy., Asheville, NC 28730; Steve Shultz, (704) 528-3020



Motorlead R/C Raceway, 125 Park St., Canton, NC 28716; (704) 648-7911


Ride & Slide R/C Raceway, 5319 Yadin Rd., Fayetteville, NC 28303; Jim Woodman (910) 425-5276 or Bill Culbertson (910) 867-4202


Rosewood Speedway, Rt. 5, Box 853, Goldsboro, NC 27530; Glenn Elam, (919) 731-4734


S&B Speedway & Hobbies, Rt. 1, Box 311A, Farmville, NC 27828; Ricky Strickland, (919) 753-4422


Sandhills Raceway Inc., US #1 South, Aberdeen, NC 28315; (919) 944-7414


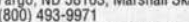
Winston R/C Drag Series, W. Clemmons Rd., Winston-Salem, NC 27106; Jack Wright, (910) 922-3800


NORTH DAKOTA


Hacienda Hills Speedway, 20 Hacienda Hills, Minot, ND 58701; Kenny Duchscherer, (701) 839-4419



Northern Mini Racers, P.O. Box 415, Minot, ND 58702; Roger Lee, (701) 839-5294



Survey International Raceway, RR 1, Box 37, Norwich, ND 58768; Marlen Lenton, (701) 728-6760



Valley Hobbie Inc., 2714 Main Ave., Fargo, ND 58103; Marshall Skare, (800) 493-9971



OHIO

Aerotech Raceway, 409 Applegrove Rd., North Canton, OH 44720; (216) 499-1300


Bryan Thunderdome, Townline Rd., Bryan, OH 43506; Brent Pfund, (419) 924-2911



C/R Hobbies and Raceway, 323 Center St., Ashtabula, OH 44004; Virginia Gapat, (216) 992-3833



CORCAR/Sams Club, 128 Amity Rd., Galloway, OH 43119-8732; Bill Stevenson, (614) 870-7159


D&J R/C Raceway, 801 W. Market St., Orrville, OH 44667; Don Yoder or Mark Nussbaum, (216) 682-4266


D&S Hobbies Raceway, 7701 Crile Rd., Concord, OH 44077; (216) 354-2112


Flag City Raceway, 3772 C.R. 18, Findlay, OH 45840; Ruth Hubbard, (419) 422-5589


Fun For All Hobby Center and Raceway, 675 College Dr., Batavia, OH 45103; Steve Smith (513) 732-0440


Hobby Mania Raceway, 6597 Route 224, Lovellville, OH 44436; (216) 536-8282


Innovative Hobbies/Lakeside Speedway, 3427 Manchester Rd., Akron, OH 44319; (216) 645-1333



JB Hobby & Raceway, 8760 St. Rt. 201, Tipp City, OH 45371; Bob Curtis, (513) 845-8222


Kent Hobby, 832 N. Mantua St., Kent, OH 44240; Bob Sabo, (216) 673-0422



Lafferty R/C Raceway, Box 153, 70228 Hurrah St., Lafferty, OH 43951; Chris Christman, (614) 968-4818



Lewisburg R/C Raceway, 395 US Rt 40E, Lewisburg, OH 45338; Bob Harting, (513) 678-8404 or (614) 889-8876



Medina R/C Raceway, 754 N. Court St., Medina, OH 44256; Bill Ahoit, (216) 723-0255


Mr. T's R/C Super Speedway, 5540 CR 16, Wauseon, OH 43567; Nick Tinsler, (419) 335-3196


Performance R/C Club of Ohio, 2206 13th St. NE, Canton, OH 44705; Greg Ledbetter, (216) 453-7089


Scoters Hobby Hut, 234 Robbins Ave., #D, Niles, OH 44446; Dave "Scooter" Evans, (216) 544-9411


Steel Valley Hobbies & Raceway, 157 N. 4th St., Steubenville, OH 43952; William Northrop, (614) 282-3003



T.A.R.C.A.R., 632 Eckle Rd., Perrysburg, OH 43551; Bill Bridges, (419) 826-3859 or Dave Scanes, (419) 893-1916


Van Wert R/C Raceway, 112 W. Main St. (above Tom's Donuts), Van Wert, OH 45891; Charlie Hire, (419) 238-4917


Y-City Hobby & Speedway, 120 S. 6th St., Zanesville, OH 43701; Kevin McKenna, (614) 455-3025


OKLAHOMA

Adams Creek R/C Speedway, 5207 S. 194th E. Ave., Broken Arrow, OK 74014; John Beighle, (918) 355-1416


Competition R/C, 180 SE 89th, Oklahoma City, OK 73149; James or Louise Brown, (405) 634-0809


RACING TO BRING YOU THE BEST!

PROTOform®

Winning in Style!



#1209 '95 Monte Carlo

At PROTOform right now, the latest news is not about the release of a new body, but about the release of a "somebody." Who was "released"? Me! My Pro-Line friends—Todd, Tim and Joe—have released me from the daily grind of trying to run a growing company so that I can concentrate on designing and fabricating new molds. My days were getting longer, and the new styles were taking too long to debut, so we decided to do what made the most sense: pool our resources and free me to do what really "turns my crank"—making molds. We're all pretty excited about what the future holds!

So far this year, race results from Bakersfield to Belgium show that PROTOform Race Bodies are the hottest ones in the R/C racing world. It started early, at the "CAM WINTERBLAST" at K&N Raceway in Connecticut, where 27 of the 32 A-Main qualifiers were PROTOform equipped. 1/12 Mod was dominated by Charlie Newman and TQ Scott Vargo, while 1/10 Stock yielded a win for Warren String Jr. over TQ Rick Haentjens. The 1/10 Mod Main was a "barn-burner" in which the amazing Stevie Flume edged out TQ Erin Rand.

At the K&N Spring Sizzler, "P.A." Rick Haentjens rewrote the track record on the way to winning both stock and modified.

When the dust settled after the ultra-competitive 1995 1/12-scale TRIPLE CROWN SERIES, Mike Blackstock had won two of the events and was crowned the champion, having edged out fellow PROTOform-equipped racer Josh Cyrul. Mark Adams also used the PROTOform P-35 Nissan to become champion in the Stock division. In the Manufacturers' Cup, we ended up with a total of 458 points. Five other brands of body were used in the Series, and their combined points totaled 379.

As usual, the U.S. OVAL MASTERS at Lake Whippoorwill attracted the best oval

racers in the country. Exactly like the '94 event, when qualifying ended, 32 of the 50 racers in the A-Mains chose PROTOform. As a matter of fact, for the fourth straight year, the top qualifier and winner of the Stock A-Main was PROTOform-equipped. It was also the fourth straight win for us in Concours. Jason Alderman, Jeremy Kornblatt and David Jones all used the #1201 and 1208 ('95 Pontiac) or the #1209 ('95 Monte Carlo) to win their respective A-Mains.

A month later, high-speed aerodynamics were put to the test at the "SPRING SHOOTOUT" at the Major Taylor Velodrome in Indianapolis. In the Enduro, Kevin Trent just plain "checked out," winning by a huge margin, and Chuck Massey came up from Florida to TQ in the Mod A-Main. But by the time it was all over, Sean Cochran—Race Tech Motorsports' own "speed merchant"—had blistered the field with the first—and still only—19-lap run at Major Taylor. He did this in the A-Main with 15 cars on the track. IMPRESSIVE! Sean, Kevin and Chuck all used PROTOform's "venerable velodrome victor"—the #1203 '93 T-Bird body. Todd Drew took first in the Insane Speed Run using the PROTOform Isdera "insane" body (#1902).

Incidentally, I've just finished updating the T-Bird to 1995/'96 specs and have "massaged" its shape a bit for even better high-speed (HS) velodrome performance. This HS T-Bird is part #1210. I've also created a second version of the 1995/'96 T-Bird (#1212) that's more suitable for small-to-intermediate paved and carpet tracks.

Last, I want to congratulate Tony Neisinger, Kirby Hand and Paul Schaub. Using our growing line of F1 and sedan bodies, Tony and Kirby set new track records at Bakersfield and King, NC. The bodies have lots of style and detail at a really fair price.

New PROTOform part nos.—Hot race bodies!

Part no.	Body
1210	'95/'96 T-Bird HS (high-speed)—regular or lightweight.
1212	'95/'96 T-Bird SS—regular or lightweight.
1303	'95/'96 Monte Carlo—wide version.
1403	McLaren MP4/9—for Tamiya, Kyosho and HPI F1 kits.
1404	Benetton B195—for Tamiya 111103 and Corally F1.
1405	'95 Saturn SC2 Coupe—for YR4 and Tamiya 4WD and FWD sedans.
1509	'95/'96 RAMBunctious "ET"—fits RC10T and RC10T2.
1510	Nevada XXT '96 Ranger—fits XXT.

RACING TO BRING YOU THE BEST!

Pro-Line/JACO HELPFUL HINTS FOR 1995!

Parking Lot Hint #3

One of the most commonly asked questions we receive is, "Which tire traction compound should I use?" Since there are numerous compounds available that perform well under a variety of conditions, we cannot recommend one particular compound. There are some guidelines, however, that should be followed when using tire traction additives. First, try what seems to be working at your particular track. Look at what the fast guys are running and how they apply the additives. How much do they put on? How long do they let it sit before they wipe it off? Do they treat all tires with the same amount of compound? Second, don't use too much traction compound or let it sit too long on the tire, because it may make the tire too soft or damage the glue joints. Carefully read the directions on the container. Many of these products are flammable, so be careful.



Mounted and trued F1 tire.

Racing Hint #3

Have you ever seen someone buy a brand new set of tires to race, only to grind them down to nothing on a tire truer? Well, believe it or not, there are some good reasons to true your tires down to race. A smaller tire means lower rotating mass, less sidewall flex and better acceleration. In our experience, a tire will "search" out its optimum diameter. For example, this means that a 2.5-inch-diameter tire may wear very rapidly until it reaches say 2.25 inches. At this point, tire wear decreases dramatically as the tire has found its optimum operational diameter. Your car is now operating at peak efficiency, and the handling becomes more stable and consistent. By truing the tires down to a smaller diameter before you race, you eliminate having to wear the tires down by abrasion alone. Remember to change



On-Road performance mounted and trued foam tires.

your gearing to compensate for the smaller tire size. Of course, truing your tires down shortens the life of the tire. This is why we recommend running tires at full diameter, unless you are competing under racing conditions.

Until next time—Good Luck!



RACING TO BRING YOU THE BEST!

**P.O. Box 456, Beaumont, CA 92223;
(909) 849-9781; fax (909) 849-2968**

Coweta Hobby & Speedway, 310 S. Broadway, Coweta, OK 74429; Derial Seabolt, (918) 486-3948
ACCE

Off-Road Car Assoc. of Tulsa, 9720 Swan Dr., Broken Arrow, OK 74014; George Gooch, (918) 486-4528
ACCE

Remote Control Race Course, 400 S. Vermont Ave., Suite 104, Oklahoma City, OK 73108; Rick or Steve, (405) 947-RACE
ACCE

Wild Country Speedway, 127 South Main, Porter, OK 74454; Charles McCollough, (918) 685-0372 or (918) 687-1686
ACCE

OREGON

Cathie's R.C. World 443 So. Calapooia, Sutherlin, OR 97479; Wes/Cathie Buzzard, (503) 459-2746
ACCE

Competition Racing Assoc., 17941 NE Glisan, Portland, OR 97230; Mark Taylor, (503) 257-0796
ACCE

Junior Vehicle Speedways, 3090 Starwood Ct., Medford, OR 97501; (503) 779-3090
ACCE

North Lawrence Raceway, 36 N. Lawrence, Eugene, OR 97401; Gary Hill, (503) 484-9857
ACCE

Pit Stop Hobby, 634 N. Coast Hwy., Newport, OR 97365; Richard Wood, (503) 265-2825
ACCE

R/C Plus Hobbies Raceway, 2029 25th St. SE, Salem, OR 97302-1130; Ron Smith, (503) 364-9188
ACCE

R/C Speed Center, 2810 N. Pacific Hwy., Medford, OR 97501; (503) 779-8298
ACCE

Yamhill County R/C Car Club, 722 Morgan Ln., McMinnville, OR 97128; Larry Rucker, (503) 472-7234
ACCE

PENNSYLVANIA

A&D's Bumps & Jumps, RR7, Box 7395C, Stroudsburg, PA 18360; Dan Ambrosio, (717) 424-1750
ACCE

Benders Junction Speedway, 2300 Benders Dr., Bath, PA 18014; Gerald Wambold Jr., (610) 759-0161
ACCE

Brookville Hobby Shop, 170 Main St., Brookville, PA 15825; Mark Tonell, (814) 849-7385
ACCE

CEB Motors R/C Div., 5743 Molly Pitcher Hwy., Marlon, PA 17235; Charlie Booze, (717) 375-4635
ACCE

Clearfield R/C Car Club, P.O. Box 297, Clark Hill Rd., Hyde, PA 16843; Joe Welch, (814) 765-3045
ACCE

Clearfield R/C Raceway, 4 Capricorn Ct., Clearfield, PA 16830; Shawn Richards, (814) 765-5608
ACCE

Cressona Mall Speedway, Rt. 61, Pottsville, PA 17901; (717) 385-3506
ACCE

DC Ultra Trax, 13 York Rd., Wycombe, PA 18974; David Cowan, (215) 672-5200
ACCE

Dreamboat Hobbies, 2810 Pennsylvania Ave. W., Warren, PA 16365; Louie Dussia, (814) 723-8052
ACCE

East St. Raceway, 736 E. Railroad Ave., Verona, PA 15147; (412) 826-0602
ACCE

Henning Scale Models R/C Raceway, 128 S. Line St., Lansdale, PA 19448; Bill Henning, (215) 382-2442
ACCE

Hipkins Hobbies Raceway, 402 W. Avondale-New London, West Grove, PA 19390; Doug Hipkins, (215) 869-8585
ACCE

Hobbies & Stuff, 116 West Apple St., Connelville, PA 15425; Mark Schomer, (412) 628-0228
ACCE

Hobby America Raceway, 5 Fitzsimmons St., Duke Center, PA 16729; Dan or Mike Coast, (814) 966-3765
ACCE

Hobby House Raceway, Downingtown Marketplace, Downingtown, PA 19335; J.T. Nelson, (610) 269-1300
ACCE

Koontz's Home & Hobby Center, 1205 Hoover St., Pittsburgh, PA 15204; (412) 331-3866
ACCE

Kranz's R/C Raceway & Hobbies, 415-B Bosler Ave., Lemoyne, PA 17043; David or Stuart Kranz, (717) 737-7223
ACCE

Marshall's R/C Raceway, RR 4, Box 640, Honesdale, PA 18431; Bill or Dot Marshall, (717) 729-7458
ACCE

Modellbahn Ott Hobbies, 1145 E. Philadelphia Ave. (Rt. 73), Gilbertsville, PA 19525; (215) 367-5925
ACCE

Mt. Laurel Speedway, 835-8 Hiester Lane, Reading, PA 19605; Joe Vaccaro, (215) 921-0176
ACCE

The Mushroom Bowl, 812 W. Cypress St., Kennett Square, PA 19348; Joe, Bruce, or Drew, (610) 444-1850
ACCE

Owens Race-A-Rama, RR 2, Box 98 F, Hunlock Creek, PA 18621; Rany Owens, (717) 477-3220
ACCE

Pinion Twisters, 3M Plant, Green Ln. and Mitchell, Bristol, PA; John (215) 632-9744, Bob (215) 945-0325
ACCE

Pro Challenge Raceways, Wycombe Ave. (P.O. Box 536), Lansdowne, PA 19050; Bob Paulavage and Don Fewkes, (610) 622-7651
ACCE

Prop & Wheels Raceway, 139 W. Broad St., Tamaqua, PA 18252; Gil Walters, Prop & Wheels Hobbies, (717) 668-2288
ACCE

R/C Pro Speedway, Milville Rd., Bloomsburg, PA 17815; Norm Swisher, (717) 387-0266
ACCE

RCO Raceway 519 Broadway, Hanover, PA 17331; Chris Shaffer, (717) 633-9490
ACCE

Riverside Raceway, PA Ave. W & Hickory, Warren, PA 16365; Jeff, (814) 723-4211
ACCE

Road Runner Raceway, 1027 E. 7th St., Bloomsburg, PA 17815; John, (717) 784-1260
ACCE

S.A. Hi Banks, Hahn's Dairy Rd., Palmerton, PA 18071; Scott Andrews, (610) 377-6123
ACCE

Sinking Spring Race Center, 237 South Hull St., Sinking Spring, PA 19608; Randy Gelsinger, (610) 670-0760
ACCE

South Mountain R/C Speedway, 357 Furnace Rd., Wernersville, PA 19565; George Merkel, (215) 267-4736
ACCE

Staub Bros. R/C Speedway, 31 Locust St., Gettysburg, PA 17325; Todd or Scott Staub, (717) 334-5445
ACCE

TC's R/Cs, 1537 Freeport Rd., Natrona Heights, PA 15065; Tom Coriale, (412) 226-8802
ACCE

T-N-T Raceway, Randolph Rd., Great Bend, PA 18821; Ed Kraft, Rd. 1 Box 199C, Hallstead, PA 18821, (717) 967-2604 or Frenchie (607) 775-1756
ACCE

Wagonhill Hobbies, 967 New Castle Rd., Rt. 422, Butler, PA 16001; Jeff Hyatt, (412) 865-9877
ACCE

PUERTO RICO

Hacienda Muñoz R/C Track, Carr. #14, Juana Diaz, PR 00795; (809) 837-7083
ACCE

RHODE ISLAND

Tri-State R/C Raceway, 205 Hallene Rd., Warrenton, RI 02886; Raymond Dean, (401) 738-4808
ACCE

SOUTH CAROLINA

Bandit's Performance R/C Hobbies, 2037 S. Main St., Darlington, SC 29532; Bryan Howie Jr., (803) 393-3333
ACCE

Coastal R/C Speedway, 8553 Hwy. 54, Myrtle Beach, SC 29577; Wendel Smith, (803) 236-9309
ACCE

The Great Escape, 105 Franklin Ave., Spartanburg, SC 29301; Jonathan Bowen, (803) 574-5273
ACCE

Hobbies and More, 1570 S. Main St., Darlington, SC 29532; Jerry Pollard, (803) 393-0355
ACCE

ORA Atomic Racing Facility, 373 Boyd Pond Rd., Aiken, SC 29803; Bill Jackson, (706) 855-0846 or (803) 642-0314
ACCE

R/C Speed Shop & Raceway, 2122 Platt Springs Rd., W. Columbia, SC 29169; Eric Prevost, (803) 791-4715
ACCE

Racer's Choice Remote Control, 4014 Fernand Rd., Piney Grove Shopping Center., Columbia, SC 29212; Clifford McLinden, (803) 561-0000
ACCE

SOUTH DAKOTA

Dakota Off-Road Racers, 2989 W. Br. Co. 12, Aberdeen, SD 57401; (605) 226-0604
ACCE

TENNESSEE

Action Hobby Shop, 3723 S. Mendenhall, Memphis, TN 38115; Brian Stricklin or Justin Austen, (901) 365-2820
ACCE

Cumberland Valley Raceway, P.O. Box 233, Ashland City, TN 37015; Jamie Pate, (615) 792-4371, ext. 1195
ACCE

D&M's Downtown Raceway, 2703 US Hwy. 411S, Maryville, TN 37303; (615) 681-8919
ACCE

Lawson Raceway, 152 Joel Rd., Oliver Springs, TN 37840; Anthony Lawson, (615) 995-9351
ACCE

Machine-Head Straits, 938 Grandmere Rd., Lawrenceburg, TN 38464; Larry and Eliane Sanders, (615) 762-6630
ACCE

MSA R/C Racing, Rt. 12 Box 489 B, Crossville, TN 38555; D.R. Findley, (615) 456-0027
ACCE

Robertson's R/C Raceway, 175 Seavers Rd., Jackson, TN 38301; Travis Robertson, (901) 424-6423
ACCE

Sparta Raceway Park, 32 N. Main St., Sparta, TN 38583; Carl (Buddy) Elrod, Rt. 5 Box #652, Sparta, TN 38583, (615) 836-8450 or (615) 761-3407
ACCE

Tri-County R/C Raceway, 919 Little Dogwood, 1312 Kingston Hwy., Kingston, TN 37763; Dwayne Romine, Kyle Romine, (615) 376-2330, 376-9555
ACCE

PRO-LINE TRACK DIRECTORY

TEXAS

AA Raceway, 1617 Foomey Rd., Austin, TX 78704; Wolf Gurnford, (512) 474-8277

AA Raceway

Austin R/C Center, 9702 Gray Blvd., Austin, TX 78758; Caton Cobb, (512) 832-8144

AA Raceway

Big Mike's R/C Raceway, 1405 W. Cotton St. (behind the Locker Room), Longview, TX 75604; (903) 297-7814

AA Raceway

Eastex Raceway, 45000 Hwy. 59 N., New Caney, TX 77357; Heinz Falke, (713) 399-1527

AA Raceway

Hal's Hobby Raceway, 1440 Bessemer, El Paso, TX 79936; (915) 591-2213

AA Raceway

Heart o' Texas Hobbies & Raceway, 309 W. Hwy. 190, Copperas Cove, TX 76522; Larry Gholson, (817) 547-7505

AA Raceway

Hobbycraft Speedway, 819 N. Main St., Corsicana, TX 75110; Keith Hoffman, (903) 872-6761

AA Raceway

Hobbytown USA, 999 E. Basse Rd., Suite 177, San Antonio, TX 78209; Joe Sena or Clark Baisdon, (210) 829-8697; fax (210) 829-8707

AA Raceway

Houston R/C Hobbies, 6338 Skyline Dr., Houston, TX 77057; Lynn Cramer, (713) 266-6006

AA Raceway

Indy R/C World, 220 Mesquite Village, Mesquite, TX 75150; (214) 271-4844

AA Raceway

Keyser's Hobbies, 1643 Texas, College Station, TX 77840; Bill Bennett (409) 693-8095

AA Raceway

Riverville Speedway, 11731 Wetmore, San Antonio, TX 78247; Ralph Hernandez, (210) 359-6870; Joe Toledo, (210) 341-5652

AA Raceway

Star/Car Raceway, 5802 Patton St., Corpus Christi, TX 78415; Mike Hellums, (512) 289-0066; Race Hotline, (512) 881-6105

AA Raceway

Star Hobbies, 1200 Hwy. 100, Box 5, Port Isabel, TX 78578; Fred Carr, (512) 943-7546

AA Raceway

T&T Eagle, 161 W. Spring Creek Pkwy., #601, Plano, TX 75023; Tony Welborn, (214) 517-0562

AA Raceway

Texas Speedway, 6707 Chimney Rock, Bellaire, TX 77401

AA Raceway

Wild Bill's Raceway, 535 E. Shady Grove, Irving, TX 75060; Lynn Morgan or Jerry Williams, (214) 438-9224

AA Raceway

UTAH

Fastrax, 355 N. 700 E., Price, UT 84501; Dave Johnson, (801) 637-6603

AA Raceway

Hansen Intermountain R/C Raceway, 8481 W. 2700 S., Magna, UT 84044; Kevin Hansen, (801) 250-8303

AA Raceway

Power Hobbies and Raceway, 135 No. 900 E., Suite 7, St. George, UT 84770; April Nutley, (801) 628-8747

AA Raceway

WOR Raceway, 3170 Brinker Ave., Ogden, UT 84401; Brian Worton, (801) 393-2530

AA Raceway

VERMONT

Bradford R/C Racing, Main St., Bradford, VT 05033; Seth Bean, (802) 222-9674

AA Raceway

Mike's Hobbies & Raceway, 162 N. Main St., Rutland, VT 05701; Stephen Rachlis, (802) 775-0059

AA Raceway

Stoughton Pond Raceway, Stoughton Pond Rd., Perkinsville, VT 05151; Rick Adams, (802) 263-9321

AA Raceway

VIRGINIA

Bob's Hobbies & Raceway, 910-J Brandy Creek Dr., Mechanicsville, VA 23111; Bob Wagner, (804) 746-2758

AA Raceway

Cooper's R/C Raceway, Rt. 4, Box 122B, Chatham, VA 24531; (804) 724-4182

AA Raceway

Crossroads Hobbies R/C Raceway, 1104 W. Main St., Salem, VA 24153; Ronnie Black, (703) 387-3414

AA Raceway

Dad's Day Off Hobbies & Speedway, 940 Radford St., A-1 Flea Market, Christianburg, VA 24073; David A. Schuh, (703) 382-9811

AA Raceway

Fairystone R/C Speedway, Rt. 4, Box 918, SR635, Stuart, VA 24171; Pat Moon Jr., (703) 930-3984

AA Raceway

Hobby Hangers Speedway, 4433 A, Brookfield Corp. Dr., Chantilly, VA 22021; Mark or Billy, (703) 631-8820

AA Raceway

The Hobby House, 116 Edds Ln., Sterling, VA 20165; Ron Beckman, (703) 444-0333

AA Raceway

KC's Radio Control & Repair, Rt. 4, Box 312, Trents Ferry Rd., Lynchburg, VA 24503; Curtis or Kim Wright, (804) 384-8596

AA Raceway

Shamrock Raceway, P.O. Box 3739, Winchester, VA 22601; Kevin Allen, (703) 662-0403

AA Raceway

Timberlake Hobbies, 212 14th St., Virginia Beach, VA 23451; Doris Cruza, (804) 491-8016

AA Raceway

Trackside Hobbies, 1920 E. Pembroke Ave., Hampton, VA 23663; Rick Cardwell or Tom Gunther, (804) 723-4170

AA Raceway

WASHINGTON

Allie's, 108 South K St., Aberdeen, WA 98520; (206) 533-6638

AA Raceway

Four Season R/C Racing, 2941 Sleater Kinney Rd. NE, Olympia, WA 98506; Gary & Sharon Brown, (206) 491-2430

AA Raceway

Hale's R/C Raceway Park, 10611 136th St. E. Puyallup, WA 98374; Walt Hale, (206) 845-7675

AA Raceway

Home Town Hobby, 116 N. Main Ave., Ridgefield, WA 98642; (206) 887-1769

AA Raceway

L&L R/C Raceway, 15818 S.E. 287th, Kent, WA 98042; Bob Lewis, (206) 631-1664

AA Raceway

Performance R/C, P.O. Box 955 (1673 Cedarale Rd.), Mt. Vernon, WA 98273; (206) 755-9464

AA Raceway

Raceway Hobbies, 188 Sunset Ave. S., Edmonds, WA 98020; Dave or Ron Steen, (206) 774-3285

AA Raceway

Rattlesnake R/C & Raceway, Brag T-121 Big Pasco, Pasco, WA 99301; Bill Brandt, (509) 545-4495

AA Raceway

Schmidt's Auto Parts, 10305 Old Hwy. 99, Marysville, WA 98271; Jon Faila, (206) 653-8838

AA Raceway

Skagit R/C Raceway, 1689 Routon Ln., Burlington, WA 98233; Jeff, (206) 724-3453; Craig, (206) 755-9464

AA Raceway

Spokane Indoor Raceway, 6422 E. 2nd Ave., Spokane, WA 99212; Dave Matson, (509) 534-RACE

AA Raceway

Tacoma R/C Raceway Hobbies, 6305 6th Ave., Tacoma, WA 98406; Neil Bide, (206) 565-1935

AA Raceway

Terror Raceway, 8012 S. Tacoma Way, Tacoma, WA 98499; Dave Kleinman, (206) 584-8659

AA Raceway

WASHINGTON, D.C.

BAFB R/CAR, Bolling Air Force Base, Washington, D.C. 20332; Charles Leadbetter, (301) 297-4524

AA Raceway

WEST VIRGINIA

Burr-Fab Raceway, 90 Davis St., West Union, WV 26456; Mark Travis, (304) 873-2487

AA Raceway

Fulton's R/C Raceway, 2646 Chapline St., Wheeling, WV 26003; James Fulton, (304) 233-5355

AA Raceway

WISCONSIN

ABC R/C, 1441 B East Main St., Waukesha, WI 53186; Dick, (414) 542-1245

AA Raceway

Antigo Hobby, 311 Superior St., Suite 7, Antigo, WI 54409; (715) 623-7655

AA Raceway

Bayland Hobbies, 951D Ashwaubenon, Green Bay, WI 54304; Dan or Jay Boettge, (414) 339-8288

AA Raceway

JJ's Dirt Heaven, 6028 County K, Champion, WI 54229; (414) 866-9096

AA Raceway

R/C Hobby Off-Road Track, Lewison Lane, Viroqua, WI 54685; Dan and Diane Sawell, (608) 637-8221

AA Raceway

Radio Mania, 129 Harrison St., North Prairie, WI 53153; Bill Bowes, (414) 392-9515

AA Raceway

S&N's Trackside Hobbies and Raceway, 6045 N. Green Bay Ave., Milwaukee, WI 53209; Scott Ernst, (414) 351-1910

AA Raceway

Sparta R/C Raceway, R&S, Sparta, WI 54656; Eric Johnson, (608) 269-6613

AA Raceway

WYOMING

Collectable Creations Off-Road Oval Track, 1790 Dell Range Blvd., Cheyenne, WY 82009; Phil Severson, (307) 632-2156

AA Raceway

Aubry R/C Car Club, Aubry Showgrounds, Aubry, NSW 2640; Ron Langman, 060-247-128

AA Raceway

Canberra Off-Road Model Car Club, Goyder St., Narrabundah, ACT 2604; Graham Brown, 61-6-241-3070

AA Raceway

Central Coast ORCC, EDSACC Sports Complex, Bateau Bay, N.S.W. Australia 2261; Peter J. Knight, 011-61-43-693-698

AA Raceway

Illawarra RCECC, Croome Sporting Complex, Albion Park Rail, NSW 2527; Mel or Andrew, 042-714-683

AA Raceway

AA Raceway

Lakeside R/C Racing Car Club, Hollywood Dr., Lansvale, NSW 2166; R. Bartolozzi, 62-2-907-9800

AA Raceway

Wodonga R/C Car Club, 11 Murphy St., Wodonga, VIC 3690; Ron Langman, 011-6160-247-128

AA Raceway

BELGIUM

Cartroules Indoor Buggy Track, Jan Moonsstraat 52-56, 2160 Wommegem, Belgium; Guy Erms, 32-3-326-51-15; fax, 32-3-326-51-01

AA Raceway

M.B.V. Parc de Reist, Tenierslaan, 28, B1910 Kampenhout, Belgium; Frank Mostrey, fax (32) 0-16657518

AA Raceway

MBV-Kampenhout, Tenierslaan 28, Kampenhout B1910, Belgium; Frank Mostrey, phone and fax (0) 16-65-75-18

AA Raceway

Model Racing Club Oudenaarde, Scheldekant, 9700 Oudenaarde, Belgium; A. Chanterier, 32-55-31-36-48; fax, 32-55-30-19-12

AA Raceway

MORRAC Raceway, 6449 Crowchild Tr. SW., Box 36060, Calgary, Alberta T3C 7C8; (403) 254-1386

AA Raceway

Off-Road R/C Raceway, 76 Eddystone Ave., North York, Ontario M3N 1H4; Ron Lefebvre, (416) 740-0536

AA Raceway

Prinze George Radio Controlled Car Club, 202 Explorer Cres., Prince George, B.C. Y2M5R8; Doug Waller, (604) 561-0035

AA Raceway

Quintrax Speedway, 610 Dundas St. East, Belleville, Ontario K7K 2M1; (613) 962-1414; fax (613) 962-7306

AA Raceway

Randy Shantz Raceway, 1015 W. 14th St., North Vancouver, British Columbia; Steve Mulhail, (604) 945-3888

AA Raceway

RC World, 7070 Haldibrook Rd., RR #1, Caledonia, Ontario N3W 2G8; Don Nicholls (905) 679-3177 or Keith Sequin (905) 388-9855

AA Raceway

Ronbo's R/C Racing, RR 1 Glen Walter, Cornwall, Ontario K6H 3G4; Ron Giroux, (613) 936-0176

AA Raceway

Rousillon Hobby Track, 177-D St-Jean Baptiste, Chateauguay, Quebec J6K 3B4; (514) 698-2151

AA Raceway

Sheldon's Raceway, Box 597, Cutknife, Saskatchewan; Sheldon Bradlow, 398-2232

AA Raceway

Spinnin Wheel Raceway, RR 1, Ariss, Ontario N0B 1B0; (519) 824-1614

AA Raceway

South Okanagan Roadhogs, Skha Lake Rd., Penticton, BC; Willie Lemm, (604) 492-5698

AA Raceway

Circuit Plessis, 260 Rang 9 Ouest, Plessisville, Quebec; (819) 362-3743

AA Raceway

Circuit R/C Pro, 1500 Chemin Sullivan, Val d'Or, Quebec, J9P 1M1; R/C Modele Plus, (819) 874-3918

AA Raceway

Circuit Teleguide St. Roch, 363-B St. Charles, St. Roch De L'achigan, Quebec J0K 3H0; (514) 588-4254, fax (514) 588-6554

AA Raceway

Club Avatt, 244 Jules-Richard, Deauville, Quebec JIN 3M2; Daniel Vanier (819) 864-6262

AA Raceway

Club RCSI, 44 Rue Holliday, Sept-Iles, Quebec G4R; Sylvio Gerard (418) 968-6575; hobby shop (418) 962-6555

AA Raceway

CRCCC, Box 309, Clinton, Ontario N0M 1L0; Eric Russell (519) 482-9429

AA Raceway

Dynamic Hobbies, 21 Concourse Gate, Unit 6, Nepean, Ontario K2E7S4; Clark Freeman, (613) 225-9634

AA Raceway


East Coast Model Center Raceway, 13 Glen Stewart Dr., Suite 1, Southport, Prince Edward Island C1A 8X9; Gary Stephen, (902) 569-3262

AA Raceway


Evolution Speedway, 1935 Glengrove Rd., Pickering, Ontario L1V 1X3; Eric Lang, (905) 839-2084

AA Raceway

Fast-Trax Speedway, RR 4, Trenton, Ontario; Russ McPeak, (613) 394-6411


Strathclair Park, Old Garden River Rd., Sault Ste. Marie, Ontario P6A 5T1; (705) 759-1855



Thunder Alley Raceway, Lambton Mall, 1380 London Rd., Sarnia, Ontario N7S 1P8; Rob Smith, (519) 882-3361


Vancouver R/C Road Racers, #100-2733 Barney Hwy., Coquitlam, British Columbia V3E1K9; Roger Brown, (604) 945-3888


COLUMBIA

Club De Automodelismo Colombiano, Centro Recreativo Cafam, Kilometro 14 Autopista Norte, Santa Fe de Bogota, D.C. Colombia; Jorge Delgado, 1-6130588


Club De Automodelismo Colombiano, Centro Comercial Guaymaral, Kilometro 16 Autopista Norte, Santa Fe de Bogota, D.C. Colombia; Jorge Delgado, 1-6130588


Garoso Raceway, Avenida Libertadores con Diagonal Gran Colombia, Cucuta, Colombia; Gabriel Rodriguez, 975-751892



CYPRUS

Racing Model Club, Kennedy Ave. N. 42, Nicosia, Cyprus; Andrea Sotiriou, 493186; fax 493229


DENMARK

Brøndby Motor Club, Roskildevejs 460 Rodovre, Denmark 2610; Søren Boy Holst, 011-45-31-472-462



Holstebro R/C Buggy Club, Mozartsvej 7500 Holstebro, Denmark 2600; Michael Brusholt, 011-45-97-412-734



Klub 144 Raceway, Bagsvaerdvej 144A, 2800 Lyngby, Denmark; Henrik Carstens, 45-42-88-3691


Rainbow Raceway, Eriksvej 9 Glostrup, Copenhagen 2600; P. Christiansen, 011-45-52-848-504


Thor Miniace Odense, Sohussvej 255, Allesø, Odense, Behind Allesø Hallen (Sport Centre), Odense, Denmark; Ulrich Rasmussen, 011-45-65-303-707


DOMINICAN REP.

Adoca R/C Speedway, Feria ganadera, Santo Domingo; (809) 220-5266


La Barranquita R/C International Speedway, Santiago; (809) 582-2303



ENGLAND

Chessington Radio Car Club, Surbiton Sport Club, Riverhill Estate, Worcester Park Rd., Worcester Park, Surrey, England; Ian Spiller, 0252-20657


FRANCE

Auto Electron, 35, rue B. de Ventadour, Limoges, France 87000; M. Boudoul, 55 062763



Crame Ronco, 64 rue du Becquerel, 59370 Mons el Baroeu, France; Michael Hondekyn, (33) 20042755


Lorgies Bolides, rue Beau-Riz, 62840 Lorgies, France; Mme. Hourdequin Sabine


GERMANY


Dreykorn Raceway, Heuchlinger-Hauptstr. 43, Lauf, 91207; Hermann Hensel, 09123-81457


MC Köln, Bottgerstr., Worringen, Germany 50769; Ralf Habel, 02733-477493



Mini Car Club Dortmund, Kortschstr. 4, 4600 Dortmund 13, Germany; Roland Schwan, 0231/213609


Oberhausen-Altsiedeln, Am Fesder-turm, Oberhausen, Germany 46099; Josef Holl, 0208-403676



Panik Raceway, Teutonen Str. 5, Jroisdorf, Germany 53844; Guido Kraft, 0224-400259


Stoppelhopper Oberhausen, Niebuhrstr., Oberhausen, Germany 46049; Matthias Reckward, 02801-1545



GUAM

R/C International Raceway, P.O. Box GK, Agaña; Robert (Buddy) Simpkins, (671) 477-3207


HONDURAS

Autodromo Accion, Quinta Santa Maria, San Pedro Sula, Honduras, Colonia Rivera Hernandez; Eduardo Hondal, (504) 52-2061


HONG KONG

H.K.R.C. Model Car Racing Club, Lot 2130-2137, Ko Po Tsuen, Sha Tau Kok Rd., N.T., Hong Kong; Alex Chan, (852) 659-2822


Kingsville Buggy Arena, Wong Chuk Yeung Village, Shatin, N.T.; Pak Yeung, (852) 607-0828



INDONESIA

Cipaku Indah Speedway, J1 Cipaku Indah II/2, Bandung 40143, Indonesia; Cipaku Indah Hotel, Brad Lake, 011-62-22-210219


Everly's Racing, Palm St., 188, Surabaya, Jatim, Indonesia; Jhon Mudik, 011-62-31-595-888


ISRAEL

Ircca Off-Road, Rahanana, Israel; Yaron Zafiris, (972) 030549937


Nahshoneat, Abba Nile Silver Str. 64, Haifa, Israel 32809; Golan Levy, (972) 039386444 or (972) 04231252


ITALY

Associazione Modellisti Cossato, via P. Maffei, Cossato 13014, Biella, Italy; Zanellato Romildo, 015-405881; fax 015-922709


JAPAN

Courtney Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674



Foster R/C Raceway, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; Camp Foster Arts & Crafts, 011-81-61173-53674


Hansen Off-Road, Camp S.D. Butler, Okinawa, Japan, FPO AP 96379; USMC Arts & Crafts, 011-81-61173-53674


Iwakuni R/C Track, PSC 561, Box 978, FPO AP 96310-0978; David T. Eck, 011-81-61173-53662


Misawa R/C Raceway, 13th Fighter Squadron, PSC 76, Box 2585, APO AP 96139-2585; 011-81-176-53-5181, ext. 226-6506


Yokota R/C Racers, PSC #78, Box 3619, APO AP 96326, Tokyo, Japan; Victor Giles, 011-81-0425-52-2511 ext 225-9025



Hadeland Raceway, 2750 Gran Gran Norway; Dag Bakke-Nilsen, 61330405


Zama Off-Road Raceway, 17th ASGCM Unit 45013, Box 3232, APO AP 96338 Japan; SFC Ken Campbell, 011-81-3117-63-8478

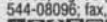

LEBANON


Wild Willy RCC, Oscar St-Jal Eddie, Beirut, Lebanon; 00961-1-403751



MEXICO

Alces Off Road, Lopez Mateos y Rayod S/N, Ensenada, Baja California, BC 22830; Jorge Bustamante, (667) 6-1476, 61477, 86729


Baja Jr., H. Valdez 151 Pte. Y Gmo. Prieto, Los Mochis Sinaloa 81200; Memo Asencio, Gaby Macias, 681-20276; fax, 681-26430


Club Kyosho de Automodelismo, Deparlin, Av. Pacifico 216 Coyoacan; Ajusco-Toluca Km 15.3 DE, Mexico 04330, Ing. Jorge Perez Holder, (525) 544-08096; fax, (525) 544-7133


Hobby Centro, 12 De Diciembre No. 3070-A, Guadalupe, Jalisco 45550; Alejandro Ortiz Del Toro, (36) 21-46-28


Hobby's Formula, Au observatorio 457 DF 01120; (905) 502-3620



Hobby Model's Raceway, Blvd. Garcia de Leon, 1555, Morelia, Michoacan 58260; (431) 5-01-22


Jaguar R/C Club, Calz. Zavaleta 116, Puebla 72150; Cherna, Denise or Chiro, (22) 31-00-91, (22) 33-00-94


La Hielera, Prol Corregidora Nte 350, Queretaro, QRO C.P. 76160; Jorge Morelos Rabell, (42) 12-15-25


Pista Casino, Hotel Casino de la Selva, Cuernavaca, Morelos 16507; Luis Duhat, (73) 19-12-38



R/C Racing Club, Obsidiana #2900, Zapopan, Jalisco 44560; Fernando Hernandez, (3) 616-73-47


Tony's Track, Obregon 364 Sur, Culicán Sinaloa; Guillermo Prieto, (67) 165708-168141


NETHERLANDS


H.F.C.C. Hollandia, De Werf 60, The Hague, The Netherlands; G. de Jong, 031-070-3679820


NEW ZEALAND


Counties R/C Raceway, Pukekohe Showgrounds, Station Rd., Pukekohe, New Zealand; R. Northcott, 09 23 86904


Harewood Radio Control Car Club, 550 Sawyers Arms Rd., Christ Church, New Zealand; Dean Johnson, 09 03 3880 344


Papakura Indoor R/C Car Club, 25 Tainere Cres., Papakura, Auckland; Colin Perry, (09) 298-4711


Western District R/C Off-Road Car Club, CNV Bancroft/Akatea Drive, Auckland; Chris, (09) 838-5201


NORWAY

Aurskog R/C Club, Aursmoen, 1930 Aurskog, Norway; Tommy Gjeleseth, 47-63-86-21-61


Dalen Raceway, P.B. 728, 6401 Molde, Norway; Johnny Reitan, 94 64 52 95


Hadeland Raceway, 2750 Gran Gran Norway; Dag Bakke-Nilsen, 61330405

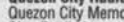

Store-Baller Raceway, 2750 Gran Gran Norway; Ola Raastad, 61330225


PHILIPPINES

Boyl R/C Hobby Shop, Unit No. 10 Lucas Commercial Center, Marcos Hiway, Mayamot, Antipolo, Rizal; Jose "Boy" Chua, 721-2555


Philippine F1/Touring Club, Super Mall I, EDSA, Quezon City 1156; Raymond Aguilar/Ron Villafior, 896-64-15/23-30-08


Philippine R/C Association, B.F. Hornes Paranaque Metro Manila 1700; Ronald/Manny Villafior, 23-30-08


Quezon City Radio Control Club, Quezon City Memorial Cir., Quezon City; Benjie Lumanlan, 731-94-53


SOUTH AFRICA

Banana County R/C Racing Club, P.O. Box 988, Margate, 4275; Dennis Steenmans, 27 (0) 391-20975


Gordons Bay R/C Club (GBRC), Andrew Norman Sports Centre, Gordons Bay, Cape Province; Andre Hollander, 024-512865



SPAIN


ADAM, Mina Flores de la Sienna, Madrid, Spain Alvaro Sarabia, 01-7471113



Club Modelismo Catilla, P.O. Box 491, Burgos, Spain 09080; A.J. Pereda, 011-34-47-240130


Club Social Sevillana, Crta. Pulianas S/N, Granada, Spain; Oscar Saenz, 958-275282


Motoclub Castellon R.C., Rafalafena, S/N, 12004 Castellon, Spain; Octavio Traver, (34) 64 229705, (34) 64 237411



Outlaw-Ullima II, Puerto Rico 27, Madrid, Spain 28016; Juan Vacas, (34) 915197298


ROARCR, Naval Station, Rota, Spain (P.O. Box 53, FPO NY, NY 09540-0013); PO Kelly Sexton, 011-34-56-822652


CRAEM, La Elipa, Madrid, Spain; Pablo Llorente, 91-3865952


SWITZERLAND

E.M.B.C.M. Raceway, Main Street, opposite police station, 8854 Siebnen, Switzerland; Markus Schmid, 01-9233621


ERMC Raceway, 14 Ch de Tavernay, 1218 Grand-Saconnex, Switzerland; M. Maurer, 19-41-22-798-9765


JMRCV-Terrain du Levant, Chemin ou Levant, 1290 Versoix, Geneva, Switzerland; fax, 19 41 22 7790805



THAILAND

Bangkok R/C Spa Huamark, 164/1 Lardprao Soi 96, Wangthonglang Bangkok, Bangkok, Thailand 10310; Mr. S. Sanghavi, (662) 931-8390, fax (662) 587-1186


VENEZUELA

Las Fuentes R/C Club, 2da Calle las Fuentes El Paraiso, Caracas, DF 1020; Franco Agrusa, (02) 461-72 55


R/C Mariche, KM4 Zona Industrial, Del Este Via Mariche, Caracas, DF 1070-A; Bruno Morganti, 58-02-241-3969 or 241-4993


Robin R/C Racing Club, Avenida Bolivar CC Luz #1, Valencia, Edo., Carabobo; Fernando León, (041) 223997 or 223886


WEST INDIES

Island Raceway, 8 Mile Post Jacks Hill, St. Andrew, Jamaica, West Indies; Rodney Littau, (809) 926-7034 or 927-1198


ZIMBABWE

Mosi-Oa-Tunya, H9619 Highland Harare, Harare Country, Masloraland, Zimbabwe; 46237


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BACK LOT

"Net" Prophet

This is my page—mine!

The opinions expressed on this page do not necessarily represent the opinions of the entire Car Action staff. Any resemblance to reality is purely coincidental. Send your correspondence, hate mail, love letters, photographs—anything you like—to Chris's Back Lot, c/o RCCA, 251 Danbury Rd., Wilton, CT 06897.

Looks like this Internet thing is no fad. Last month, I started this section in the "Back Lot" for the info-highway wanderers. I devoted more space to it this month to drive the point home. Send me a message (my Internet address is: chrisc@airage.com), and I'll print your message if it's funny, informative and short! Naturally, messages telling me how great I am will get special attention. If I really get lucky, you'll answer one another's annoying questions so I can take the day off. Hope to hear from you.



From: FBIJohn@aol.com
Thanks for reading this. I have two R/C cars, and I have a similar problem with both of them. One car is an RC10L, and the other is a Kyosho Lazer. The problem I seem to be having is high-speed cornering. When traveling at high speeds, the cars have a terrible habit of "donutting." Although this was a cool look the first few times it happened, now it has become very annoying. My friends' cars don't have this problem, so I know it's not just the sheer speed. They aren't modified, so speed wouldn't really be the problem anyway. Please give me any advice you can.

Because of this tendency, I'm losing interest in R/C cars. I would love any suggestions you have to offer. Thanks for your time. John



Hey, John, how's it going? Listen, with an on-road car like the 10L, try a harder-compound foam in the front or a softer one in the rear. As far as the Lazer is concerned, well, look, that's 4WD; and they just don't spin donuts so easily. So, ah, with that in mind, John, and with all due respect, what I really think you should do is read the previous letter from Steve very carefully.

CC

From: desote77@snybufaa.cs.snybuf.edu
Hello, oh mighty wild one. Well, I'll start off by saying that I realize that you probably don't have time to write back, but that's OK. It's so crazy being able to send people stuff to God knows where and be able to get stuff back. By the way, your mag is great, but I'm sure you've heard that a million times already. Anyway, it's the night before the first race of the season at my local track, and you could say that I'm getting pre-race jitters. I've been racing for about six years now, and just last year, I learned to slow down a little and actually drive the car, not just speed down a straight and crash. I'm very excited about this season, to say the least. Well, I just wanted to write and tell you to keep up the good work. By the way, I just got the July issue, and let me say, in the "Back Lot" there are some tricky cars. I think I'll have to do some research on them—good choices, to say the least. Well, gotta run. See ya, chief. Steve

Good point, Steve. Think of it: actually driving your car around the track instead of speed-bashing your way around it—a simple concept that eludes many. Sorry, you're too late for the contest—maybe next time. Thanks for the message. CC

From: MauiJ.@eworld.com
Hey, Chris, I love your Back Lot. I mean, who cares about all that P.C. crap anyway? This hobby needs you, man. You should have added Kathy Lee and Regis to your "lamest list," too.

F1 is my favorite racing now; I've put my RC10T aside for now. Why doesn't one of the big names like Protoform come out with all the new F1 bodies? That would be much better than the racing teams of two or three years ago.

Thanx for the column and opinions.
Mike Jones
Sunnyvale, CA

Kathy Lee and Regis! Mike, you're right. How did I ever overlook those two Lame-aneans—the Duke and Duchess of Lame-a-Lot—the Lois Lames of Metropolis—the Lame-ettes of Radio City Music Hall—the Clark Kents of Lameville—the Gene Kellys of Lame-a-doon. I'm going to puke if I don't get off the subject right now!

Anyway Mike, Protoform not only makes a 194 McLaren F1 body, but they also just introduced a new '95 Benetton, which I featured in this month's "Inside Scoop." See, things do go right now and then. Thanks for the support, Mike, I really do appreciate it. CC

And the winner is...

The winner of my Back Lot Name the Car Contest that was in the July '95 issue is Jeff Wacker of Leavenworth, KS.

Jeff, who was one of a few who named all the cars correctly, gets two years of Car Action free, while the rest of you losers get *nothing*! Another correct answer came from Bruce Warf of Newburgh, NY, but sorry Bruce, Jeff's answer simply got here first; blame your postmaster. Good work guys. There were more than 120 responses, many of which were wrong! The correct answers are above.



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